



SATURDAY, MAY 1, 1875.

Contributions.

Journal Friction.

NEW YORK, April 24, 1875.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Allow me to call your attention to a serious mistake or misunderstanding of the writer of "A Standard Car Axle" in your issue of April 17, in answering the objection of "increased friction" in the use of large journals.

The amount of friction of a 3-inch journal is, under otherwise similar conditions, most decidedly the same as that of a 6-inch journal, but are we really to believe in all earnestness the latter to be overcome on the same sized car-wheel by the same tractive force as the former? What was meant by the opponents of a large journal, though perhaps not expressed in so many words, was the mechanical work or duty of friction expressed in foot-pounds, or also the friction of the journal as reduced to the circumference of the wheel, while your writer evidently refers to the friction as a resistive force of so many pounds on the circumference of the journal merely, and pays no attention whatever to the leverage by the aid of which it has been balanced.

If it was an intentional misapprehension of terms, then the argument was trifling with the question, to say the least.

OTTO GRIMM, P. O. Box, 3,986.

We despair of ever being able to make this subject clear to some people, but will make another effort. What we said was, that "friction is, within ordinary limits, independent of the area of the rubbing surfaces in contact." Thus, suppose we have a block of cast iron of, say, the form and size of an ordinary brick, and that the surfaces of this piece of iron are finished as nearly true as is possible by filing and scraping. Suppose then that we have a large surface plate, say five feet long, also finished perfectly true. Now if the block of cast iron is placed on this surface plate, it will slide as easily if it is laid flatwise as it will edgewise. This will be shown if the surface plate is inclined just so much that the block will start by its own weight and slide down. If this is done, it will be found that the same inclination is required, no matter which surface of the block is placed on the inclined plane, thus showing that the friction is the same in both cases, and therefore independent of the area of the surfaces in contact.

The same thing will be true if we take a journal, say 3½ inches in diameter and 3 inches long, and another of the same diameter and 6 inches long. The friction will be the same in both cases, unless the weight on the journal is so great that the oil is pressed out from between the surfaces in contact. Now it is apparent that with the same load on the journal the weight per square inch will be twice as great on the short journal as on the larger one; therefore the oil is more likely to be pressed out from between the rubbing surfaces in contact with the former than with the latter. It is found that the friction of a journal is very much less if it is perfectly lubricated than when the surfaces are not thoroughly oiled. For this reason, then, with heavy cars there is quite certain to be less friction if the journals are large than if the rubbing surfaces are of small area, because in the latter case the oil is quite sure to be partially pressed out from between the two surfaces, and they will therefore be very imperfectly lubricated.

Our correspondent calls up the old objection of leverage being increased by increasing the diameter of the journal. Undoubtedly such would be the case if the surfaces were in exactly the same condition. The large diameter journal will require more "pounds on the circumference of the wheel" to move it than a smaller journal will, but it is impossible to increase the length of a journal beyond a certain point without at the same time increasing its diameter. If it is too long for its diameter, it will spring or break, as car journals often do; therefore if we want a large journal, we must increase its diameter as well as its length. When we do this, we gain more by the increased area of the rubbing surfaces, and consequent improvement of lubrication, than we lose by the leverage, owing to the greater diameter of the journal. It is because we believe that this gain is very much greater than the loss that we advocate larger car journals than are ordinarily used.—[EDITOR RAILROAD GAZETTE.]

The Renewals of Iron in the Waterbury Bridge.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I wish, through your columns, to thank Mr. Hewins for correcting a statement in my last letter concerning the non-renewal of suspicious iron in the Waterbury Bridge. I regret exceedingly to have been the means of giving currency to false reports, tending to injure the Central Vermont Railroad or any one. I can only plead in excuse that my information was obtained from an intelligent mechanic who was on the ground during the rebuilding after the fall, whom I have known for some years, and considered reliable. If I had been a more constant reader of the Gazette I might perhaps have been better informed.

I wish also to thank you for using your columns lately in endeavoring to correct erroneous statements about the Springfield bridge. I have no time to carry further a controversy which promises to consist chiefly on my part in contradicting erroneous assumptions made by a critic, on which specious reasonings may be based. I will refer only to one point in his last letter, as a sample, viz. After visiting the bridge to see for himself he says: "I find the ties to be 7½×8 inches by 12 feet long—30 feet, B. M., per lineal foot." These ties therefore contain each 60 feet B. M., for

$$\frac{7\frac{1}{2} \times 8 \times 12}{12} = 60.$$

So the statement quoted above could be true only on the assumption that the ties were spaced 2 feet on centres. The fact is, they are spaced only 15½ inches on centres, giving 47 feet B. M., instead of 30 feet per lineal foot of track, besides the guards, which give 10 feet more as he says, making 57 feet in all.

When men get reduced to such weapons as this I don't care to spend time in following them. They are welcome to the last shot.

EDWARD S. PHILBRICK.

Boston, April 27, 1875.

[That this controversy may be brought to a close as early as possible, we showed the above letter to Mr. Bender before its publication, to enable him to reply in the same number. There are too many contradictions as to the facts in the case to make a discussion of the principles involved of any value. If Mr. Philbrick, under whom the bridge was built, says the distances and quantities are one thing, and Mr. Bender, who measured them, says they are another, no reasoning as to the stability of the structure will convince anyone until these facts are established beyond contradiction.—EDITOR RAILROAD GAZETTE.]

Mr. Bender's Rejoinder.

TO THE EDITOR OF THE RAILROAD GAZETTE:

In answer to Mr. Philbrick, I state that I have measured the distances of the ties from center to center and found them, as usual, not quite regular, but amounting from 20 to 24 inches. As far as "the last shot" of Mr. Philbrick is concerned, it was plain to me that this gentleman would by no means be more fair to me than he has been at his three times repeated letting of the bridge, until finally the lattice builder succeeded in the manner known.

His mode of ending the controversy by abusing me was predicted to me and does not astonish me. CH. BENDER.

Mr. Bender's Criticism of the Springfield Lattice Bridge.*

SPRINGFIELD, Ill., March 30, 1875.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Inasmuch as Mr. Bender, in his article in the Gazette for February 27, has impeached the motive which prompted me to write, I think it no more than just that I should supplement my "running description" of the Springfield bridge with a few remarks, that Mr. Bender and your readers in general may be disabused of any false conceptions.

While the bridge was being erected, a Western engineer, on a trip through the Eastern cities, obtained copies of the working drawings then in Mr. Philbrick's office. Through the kindness of this gentleman I obtained the same "notes." Several members of the profession, who took their degrees when I did, requested me to give them copies of my notes. The difficulty of satisfying their desires directly, and the supposed (?) value of the "notes," led me to select and publish what I considered enough to give a general and correct idea of the bridge.

There was no motive whatever to write "towards planning the way of introduction of lattice bridges like the one at Springfield."

The accompanying plate of details I trust will be sufficient, with the general description already given, to give a very full idea of the bridge.

Figures 10, 11, 12, 13, 19 and 20 give a few details of the outside trusses. Fig. 14 shows the half plans of top and bottom laterals. Fig. 15 gives the half elevation of portal. All other figures give details of central truss. Figs. 16, 17 and 18 show the central connections of upper chord, the positions of which, relative to the center panel, are indicated in fig. 14 at C. With a little thought the figures will explain themselves. Of course there are many other details that would be acceptable, but these, being the principal ones, I hope will suffice.

In regard to Mr. Bender's article of February 27, 1875, allow me to say that I assumed the "live load per lineal foot of the whole bridge" at 3 tons, or 6,000 lbs., which was stated before implicitly, but could have been made explicit by a little thinking.

As to the question whether riveting diagonals firmly together at their points of intersection is justifiable, Mr. Bender remarks that "This question is now believed to be determined to the contrary, and it is well known that the calculated strains of such structures do not deserve to have much reliance placed upon them." It is a question which has often been thought and written about, and as often been given up without any decisive results. If Mr. Bender will recommend the author who has proven or disproven the question by the laws of mechanics, he will confer a favor, for I have seen nothing as yet which settles the question beyond a doubt. Nor is it true that "such structures" (well-designed lattice bridges) do not deserve to have much reliance placed upon their calculated strains. Mr. Hilton's Canastota lattice bridge, and many others, have worked under heavy traffic for years, and have proven that the reliance placed upon their calculated strains was not misplaced, notwithstanding Mr. Bender's statement, and his accumulation theory.

*It is proper for us to say that this communication was received some time before the appearance of Mr. Bender's last letter, and should have appeared two or three weeks ago, but for delays both in corresponding concerning it and in engraving the figures.—EDITOR RAILROAD GAZETTE.

Even if riveted intersections were not justifiable, let us see how it would affect the Springfield lattice: Take any diagonal x'—14 (fig. 1, p. 452, Railroad Gazette, 1874) whose maximum stress is 149,388 lbs., and whose effective area is 15.4 sq. inch. If the metal were worked up to the prescribed limits, the maximum stress would be 154,000 lbs. Hence we have a margin of 10,612 lbs. in this tie. This tie, at its intersection with, is riveted to the strut z z', whose maximum stress is 99,218 lbs., and whose effective area is 15.2 sq. in., giving a margin of 6,382 lbs. for the strut. Now, if Mr. Bender can prove that by riveting the diagonals together at their intersection the metal is worked above, or even up to, the prescribed limits, then will he have proven that in this particular detail the Springfield bridge is not properly designed.

As to Mr. Bender's paragraph of italics. If Mr. Philbrick's interpretation is the correct one, then has he refuted the statement, so far as the bridge in question is concerned. If the interpretation is not the correct one, we suppose Mr. Bender will gladly correct it, and give more fully the theory by which he increases the stress of 10,000 lbs. per sq. in. to 16,000 or "even 30,000 lbs. per sq. in."

Whether Mr. Bender's calculations can be verified by actual experiment or not, they can in no way affect the strains and stability of the Springfield lattice, whose margins of safety, and effective designs, as Mr. Philbrick has shown, provide for greater contingencies than the imperceptible and local strains which Mr. Bender attempts to introduce.

"However careful the construction of this bridge may be, or its execution may have been in other respects, the introduction of riveted lattice bridges in the West cannot thereby be justified." Whether this be true or not, it is certainly evident that Western engineers will be very reluctant to accept any system good designs of which will, even occasionally, "let the first engine and train through."

The pages of the history of bridge construction have yet to be blotted with the first failure of a well designed lattice bridge. Mr. Hilton's Canastota lattice bridge worked under a heavy traffic for eight years without a loose rivet and with no "tinkering." Of its history after eight years I am not informed, but feel confident that it is now doing its work as effectively as ever. It remains for Mr. Hilton's design at Springfield to show a similar history.

Prof. C. A. Smith, C. E., the Western engineer previously mentioned, has designed a large amount of riveted work at St. Louis, and vicinity, and has yet to witness the first failure of any of his designs, all of which have given entire satisfaction.

But to statements and facts of this description, Mr. Bender rejoins that "This result at best only proves that properly designed pin-jointed skeleton bridges are built too strong comparatively."

Let us now look for a moment at Mr. Bender's hobby bridge—the theoretically perfect bridge. About three or four years ago a bridge company built an iron girder bridge, with cast-iron connections (what Mr. B. probably calls distinct joint boxes) on the line of a Missouri railroad. The bridge went down as the first train attempted to cross,—but thanks to the wary engineer the false-work beneath had not been removed, and no serious damage was done. The Superintendent and Chief Engineer of the road ordered every cast-iron joint to be removed and wrought iron substituted.

A short time after this failure another similar bridge on the same road "went down." And in 1874 a Warren girder with cast-iron connections over a river on the same railroad let an engine and several cars into the river. These bridges were from a company which designs its work well, and which has talented and educated engineers at its head. Who or what is accountable for these failures? Is it the superior engineers or the inferior systems employed?

If the experience of other railroads is as fruitful in failures of this description as that of this one, then it will not take many years to convince buyers (and Western engineers) that the bridges which fail less frequently and last the longest, although a trifle less scientific in detail design, are the most economical and effective.

The system which Mr. Bender thinks preferable for bridge connections may fulfil all conditions imposed by a strict theory, but in two or three instances it has certainly proven to be a very scientific(?), ineffective and expensive practice.

W. BARTLETT, C. E.

[Mr. Bartlett specified the bridges which he mentions as having failed, and, that some explanation of the circumstances attending the failures might appear at the same time with this statement of them, we applied to the engineer who built the bridges. His account is here appended.—EDITOR RAILROAD GAZETTE.]

"The accidents (there were but two not three of them) are the only legitimate ones which have occurred in our practice, and both taking place on the same road it may reasonably be presumed had a common cause or causes. These were, simply, inefficient shop inspection and too great haste in the field force—the same causes probably which caused the failure of the lattice girder in Peru, about which so much has been written and said. In addition to this an attempt was made to secure a toughened cast iron by the use of a large proportion of cold blast scrap, which however destroyed the fluidity of the iron to such a degree that it was very difficult to obtain a perfect casting.

"One of these bridges was a wrought-iron Warren girder with cast-iron joint-boxes. The span was unfinished—having been swung but a short time before and the lower falsework being still under it—when the first train came on it. The center joint-box gave way and the span settled down on the falsework. Upon examination it was found that a "cold short" existed in the iron which divided nearly half the sectional area of the box. Notwithstanding the eighteen inches of fall, no wrought iron was broken in the bridge. As there were eight more spans of the same pattern to go up, wrought-iron joint-

boxes were substituted, and these bridges have given several proofs of their efficiency since—not the least of which was that of a train running into a drove of horses on one of them some 18 months since.

"The other bridge was a composite triangular, with wooden chords and braces. The angle-blocks were not unlike those of a Howe truss, but much heavier and bored for turned pins $3\frac{1}{2}$ in. in diameter. After nearly four years of heavy service, one of these spans suddenly let down, but with so little breakage of parts that the cause of the mischief was clearly defined. One end angle-block showed an old crack—well rusted—extending from the pin outward; and from the position of the bridge and the train there was no question as to this angle-block being the cause of failure. A rigid examination of the men who had put the work in place revealed the fact that in this particular angle-block the pin-hole had been bored too scant for the pin, and that the holes in the inner ribs were slightly out of line with those in the outer ribs. Anxious to finish, however, the workmen had forced the pin home without reporting the fact, and the subsequent history is easily given. With the first heavy frost the casting contracted on the pin, was burst in the contraction, and from that time forward it was simply a question of time as to how soon the crack would work out to a fatal part of the casting. Apprehensive that there were other cases of tight pins in this particular work, the whole of these angle-blocks in these bridges were removed, and new ones substituted in which the fit of the pin had been thoroughly inspected. These castings were made away from the bridge works and were shipped at a time when our inspectors were both on duty in Eastern shops."

General Railroad News.

OLD AND NEW ROADS.

Gulf, Colorado & Santa Fe.

This company has been calling for proposals for the construction of the first section of its road, from Galveston, Tex., westward to the crossing of the Columbia Division of the International & Great Northern, about 40 miles. Separate bids are called for grading, in sections of about 10 miles; for 90,000 ties, pine, cypress or oak, in lots of 10,000; for 3,500 bridge piles, cedar or pine, 20 to 22 feet long, in lots of 500; for 300,000 feet yellow pine timber, 12x14 or 6x14 inches, 25 feet long, and 145,000 feet 12x12 inches, 14 feet long; for the construction of the bridge and draw over West Bay at Galveston and the bridge over Highland Bayou; for track laying per mile, in sections of 10 miles. Proposals are also invited for treating piles and bridge timber to protect them against worms and dry rot. Proposals will be received for the entire work or any part. Plans and specifications may be seen at the company's office, No. 176 Strand, Galveston.

The building of this first section will hardly bring much traffic to Galveston that does not go there already, and is not likely to be at all profitable by itself. The company probably intends to complete it from the proceeds of the stock subscriptions and then base upon it an issue of bonds to provide means for another section. By its construction also a part of the land grant will be secured.

The Railroad War.

The Ohio & Mississippi and the Terre Haute & Indianapolis have put an end, for the present at least, to the cutting of passenger rates between Cincinnati & St. Louis, which has been going on for some time past. By agreement of all the lines concerned, the fare between the two cities has been fixed at \$9.50, or 50 cents less than the old rate. During the last few months it has been at times down as low as \$1.

A contest has broken out in the South, the New Orleans, Mobile & Texas having reduced rates from New Orleans to New York; the New Orleans, St. Louis & Chicago has done the same, and further reductions are expected.

Vice-President King has expressly denied the rumors that the Baltimore & Ohio has leased the New Jersey Southern road.

The Baltimore & Ohio recently cut down rates from Cumberland, Mo., to Baltimore, to 35 cents per 100 pounds, first class; second class, 30 cents; third class, 25; fourth class, 20; special, 18. The reduction was over 50 per cent. on all but special class. The Pennsylvania agents at once announced the following rates: first class, 30 cents; second class, 25; third class, 20; fourth class, 18; special, 15. The traffic between Cumberland and Baltimore is large—chiefly coal.

Detroit & Milwaukee.

The order appointing Mr. Trowbridge Receiver directed him to pay the current wages out of current receipts and to apply any surplus of earnings over expenses to the payment of arrears of wages due. He accordingly notified the employees that the wages for the last half of April would be paid as soon after May 1 as the pay rolls could be made out, and that the arrears due for February, March and the first half of April would be paid as soon as possible. This caused much excitement among the men, who feared the loss of their back wages, and a general stoppage of work in Detroit and vicinity was the result, not only the shop work, but also the running of trains being stopped. After consultation with a committee of the employees, however, Mr. Trowbridge applied to the Court and secured a modification of the order, allowing him to borrow money enough to pay the wages due for February at once. The March wages would then be paid in the first week of May, and those for April as soon thereafter as possible. This was satisfactory to the employees, and they returned to work the next day.

Springfield & Pawnee.

Arrangements are being made to organize a company to build a narrow-gauge road about 15 miles long, from Springfield, Ill., south to the village of Pawnee.

Meetings.

The following companies will hold their annual meetings at the times and places given:

New York & Harlem, at the Grand Central Depot, New York, May 18, at 12 noon.
Seaboard & Roanoke, adjourned from April 22, at Portsmouth, Va., May 4.
Baltimore, Hampden & Townsontown, in Baltimore, May 4.
New York Central & Hudson River, in Albany, N. Y., June 2.
Transfer books will be closed from May 1 to June 3.
Central Vermont, in St. Albans, Vt., May 19, at 12 noon.
St. Louis, Alton & Terre Haute, at the general office in St. Louis, June 7, at 3 p. m.
Keokuk, Iowa City & Minnesota, in Washington, Ia., May 5.
Tyrone & Clearfield, in Philadelphia, May 3.
Charters, in Philadelphia, May 3.
Colorado Central, in Golden, Col., May 19, at 2 p. m.

Chicago, Burlington & Quincy.

In accordance with the provisions of the sinking-fund 8 per cent. mortgage, sealed proposals are invited for the sale of 344

or any less number of the bonds issued under that mortgage, for the purposes of the sinking fund. Proposals were to be addressed to the Assistant Treasurer in Boston up to April 28.

The company has given notice that it will no longer receive the cars of the commission fast freight lines. It is said that the Rock Island and the Northwestern companies are preparing to take the same action. The Blue Line runs on the Chicago, Burlington & Quincy, and the Red Line on the other two roads. These are both co-operative lines, wholly owned by the companies over whose roads they run.

Worcester & Shrewsbury.

Surveys have been completed for the extension of this narrow-gauge road eastward from its present terminus through Shrewsbury and Northborough to Marlborough, Mass., a distance of 16 $\frac{1}{2}$ miles. The estimated cost is about \$10,000 per mile. The extension will be built to Shrewsbury this summer, but the completion of the road to Marlborough is still in doubt.

Dividends.

Dividends have been declared by the following companies:
Boston & Albany, 5 per cent., semi-annual, payable May 15.
Boston & Maine, 4 per cent., semi-annual, payable May 15.
Lowell & Lawrence, 3 per cent., semi-annual, payable on demand.

Boston & Providence, 5 per cent., semi-annual, payable May 15.

Concord, 5 per cent., semi-annual, payable May 1.
New Bedford, 4 per cent., semi-annual, payable May 1.

Memphis & Charleston.

The people of Tusculum, Ala., have made a liberal offer to the company to induce it to remove the repair shops of the road to that place. No final action has yet been taken in the matter.

Union Pacific.

The breaks in the roads have all been repaired with the exception of about six miles between Green River and Lawrence, over which passengers are now transferred by teams. Subsequently other wash-outs occurred in Weber Canon and near Church Buttes, causing fresh delays. A large force is at work repairing the breaks, but it is uncertain when the road will be open. The streams are generally higher than they were ever known to be before. More or less damage is reported from Ogden to Rock Springs, 200 miles, all along the line.

High water in the Missouri has done much damage to the road at Omaha. April 25 a large part of the freight yard was under water and the river was washing out the heavy fill in the east approaches to the Missouri River bridge.

Two trains arrived at Omaha, April 26, bringing 400 delayed passengers, and it was expected that the next day's trains would clear the road of eastern bound passengers.

Cincinnati Southern.

Messrs. Kuhn, Loeb & Co., bankers, will receive, at the American Exchange National Bank in New York, up to May 10, sealed proposals for the purchase of \$1,500,000 Cincinnati City 7.5 per cent. bonds, issued for the construction of this road. This is the balance of \$10,000,000, the rest having been sold. Besides the ordinary security of a city bond, these bonds are secured by a first mortgage on the road. No bid will be received for less than 102 and accrued interest.

Green Bay, Wabashaw & Faribault.

It is stated that Eastern parties have agreed to take an interest in this road, and that it will be built from Wabashaw, Minn., westward to Faribault, through the Zumbro Valley, this season.

Pullman Southern Car Company.

The parties formerly composing the Paine Sleeping Car Company have brought suit against the Pullman Southern Car Company and the Pullman Car Company in the Kentucky Chancery Court, to compel the defendants to turn over to them \$125,000 in stock, with dividends accrued thereon. This stock, it is claimed, was to be issued to plaintiff in consideration of the transfer to defendants of certain rights and privileges, but has been withheld contrary to the contract.

Columbia Conduit Company.

It is announced that this company, having failed to receive the aid expected from the Pittsburgh oil refiners, has given up the attempt to carry its pipe line into Pittsburgh, and is now negotiating for the sale of its property to the Empire Transportation Company.

Auction Sales of Railroad Securities.

At auction in New York, April 28, the following prices were obtained: New Haven & Northampton stock, 87 $\frac{1}{2}$ and 88; St. Louis, Vandalia & Terre Haute first-mortgage, 100; Louisville & Nashville consolidated bonds, 89; Chicago & Canada Southern first mortgage, 109; Petersburg Railroad first mortgage, 80 $\frac{1}{2}$; Houston & Texas Central first mortgage, 80 $\frac{1}{2}$; Toledo, Wabash & Western second mortgage, 86 $\frac{1}{2}$.

Delaware, Lackawanna & Western.

The Utica (N. Y.) Herald says that this company and the Delaware & Hudson Canal Company have formed an alliance for the transportation and sale of coal. By this arrangement the Delaware, Lackawanna & Western Railroad will receive coal for the northern region including Utica, Syracuse and Oswego, from the Delaware & Hudson Canal Company. The territory west of Schenectady will be supplied from Utica. It is rumored that this combination will have the effect of causing the Rome and Utica branches of the Midland, now worked by the Delaware & Hudson Company, to be abandoned.

Kansas Pacific.

The agreement for the transfer of the Colorado Central and settlement of existing difficulties with the Union Pacific has been published and is, briefly, as follows:

1. The Kansas Pacific and Colorado Central companies to be consolidated under the name of the Kansas Pacific Railway Company, the capital stock to be \$20,000,000.

2. Of the new stock \$10,000,000 shall be exchanged for the present Kansas Pacific stock and \$10,000,000 shall be issued to parties named by the Union Pacific, whereupon all outstanding stock of the Colorado Central shall be canceled.

3. The new company shall issue \$5,000,000 of 7 per cent. bonds having 30 years to run, which shall be secured by a mortgage subject to existing mortgages on both roads; it shall not include any of the Kansas Pacific lands between the 393rd and 405th mile posts.

4. Of this \$5,000,000 of bonds, \$1,250,000 shall be used to retire the Kansas Pacific income bonds at not more than 80 per cent. of their face, and \$525,000 shall be used to retire all of the Arkansas Valley bonds not held by the Kansas Pacific.

5. There shall be issued to the Union Pacific \$1,300,000 of these bonds to be used in extinguishing the debt of the Colorado Central, and it is agreed that that road shall be transferred free from all debt except its funded debt. (This is reported at \$615,000.)

6. The remaining \$1,225,000 of bonds shall be used as far as possible to retire \$700,000 Junction City & Fort Kearney bonds and \$445,000 Kansas Pacific second-mortgage land-grant bonds, the latter to be cancelled and the Junction City & Fort Kearney bonds, together with the \$1,125,000 Arkansas Valley bonds, to be retained by the company.

7. All stock in and bonds of the Junction City & Fort Kearney, the Arkansas Valley, the Denver Pacific, the Denver & Bowlder Valley, and the Colorado Central companies owned by either of the parties hereto, shall be transferred to and held by

the trustees of the five million mortgage before mentioned as further and additional security for the said bonds.

8. In case of want of legal authority to complete the consolidation, the object desired shall be secured by any proper and legal course, either by lease, running or traffic agreements or otherwise.

Before the execution of this contract it is stated that the following agreement was signed:

"It is understood and agreed that if the arrangements for consolidation of the Kansas Pacific Railway Company and the Colorado Central Railway Company now pending be carried out, the Union Pacific Railroad Company will abandon to the Consolidated Company all the local traffic in Colorado, and will not interfere therewith, and that the Consolidated Company will abandon to the Union Pacific Company all claims to pro rata on the traffic west of Cheyenne, and that such instrument as may be necessary to carry out and effect this object shall be executed."

The agreement of consolidation will probably have to be ratified by a stock vote.

The County Board of Leavenworth County, Kansas, has passed resolutions declaring that the transfer of 5,000 shares county stock in this company made September 2, 1871, to the Farmers' Loan & Trust Company as trustee, was fraudulent and void, and directing the county officers to take the necessary steps to secure a return of the certificate and to prevent any transfer of the stock by said trustee.

Indianapolis, Bloomington & Western.

The Indianapolis Journal says: "After five months of constant work the Receiver of this road has got matters in such shape as to know the condition of the finances, the road-bed, equipments, etc. It has proved a herculean task. There are some \$12,000,000 of debts hanging over the road, varying in sums from one dollar to thousands, and ninety-nine of every hundred of the creditors, or their representatives, from bondholder down to section-man, has either called on the receiver to learn when and how they were to get their pay, or asked by letter. Many have been quite impudent in their interrogatories and demands, while others have acted like gentlemen; but in all cases has Gen. George B. Wright, the Receiver, shown his ability to cope with the overbearing creditors, the wise lawyers, and the more sensible men to whom the road is indebted. The employees are now receiving their pay on the 14th of each month, and matters are moving on finely, and no doubt in another five months the Receiver will be able to make a favorable report to all concerned."

Northern Central.

At the monthly meeting of the board in Baltimore last week a new contract between the Union Railroad Company and the Northern Railway Company regulating tolls was read, and several changes were ordered, and the proper officers of the company were authorized to sign the contract.

Mr. W. H. Brown, Engineer of Maintenance of Way of the Pennsylvania Railroad Company, submitted for discussion plans for the proposed elevator at Canton and the general offices of the company at the corner of Calvert and Centre streets. After discussion they were referred back, and will be submitted entire by May 1, when proposals will at once be asked by publication.

After the meeting the board visited Canton to inspect the site of the new terminal improvements. It is now expected that in addition to the 70 acres already leased at Canton 30 acres more will be taken, for the purpose of establishing a large oil depot and wharves.

New York Central & Hudson River.

The divisions of the line from Albany to Buffalo have been rearranged so as to do away entirely with the present Middle Division. There will be hereafter only two divisions, the Eastern, from Albany to Syracuse, 147 $\frac{1}{2}$ miles, and the Western, from Syracuse to Buffalo, 149 $\frac{1}{2}$ miles. Mr. George H. Burrows, heretofore of the Middle Division, will have charge of the new Western Division and will probably have his headquarters at Rochester. The Western Division will include the Auburn Branch as well as the Suspension Bridge Line and other branches, covering all the road west of Syracuse.

The Fourth Avenue Improvement in New York is so far completed that trains will begin to use the sunken tracks from the Grand Central Depot to the south end of the Yorkville tunnel, May 2.

Montreal, Chamby & Sorel.

The name of this road has been changed to Montreal, Portland & Boston. It will, when completed, be the Canada section of the Portland & Ogdensburg line to Montreal.

Monticello & Port Jervis.

The town collectors along the line have been levying on the equipment of this road for unpaid taxes, the receiver, Mr. Charles Winfield, having been unable to pay them.

The Pennsylvania Tax on Anthracite Coal.

The Pennsylvania Coal Company, the Delaware, Lackawanna & Western Railroad Company, and the Delaware & Hudson Canal Company, having refused to pay the tax on anthracite coal, under the act of 1868, from the time the new Constitution went into effect, January 1, 1874, until the passage of a new act in conformity with its provisions, April 24, 1874, the State began a suit in the Court of Common Pleas, which has just been decided. The companies disputed the legality of the tax, on the ground (1) that the statute of 1868 was abrogated by the new State Constitution; and (2) that the tax upon coal intended to be exported beyond the bounds of the State was such a regulation of inter-State commerce as was in derogation of the Constitution of the United States. The court decides both points against the companies, and holds that the new Constitution did not suspend the operation of the act of 1868, or any other law necessary and proper to carry on the Government pending the enactment by the Legislature of statutes in conformity with that instrument; and that the tax levied by the State under the act of 1868 being a tax on the property and business of the corporations, is not a tax on commerce, but an incidental burden on commodities, of the same nature as other taxes which enhance the cost of production, and therefore not in conflict with the Constitution of the United States. The amount of tax in dispute is \$48,777.82. The cases will be taken to the Supreme Court.

Erie.

The new bridge over the Delaware at Saw Mill Rift, near Port Jervis, is completed, and the work of removing the temporary trestle bridge is going on. The lower chord of the new bridge is 10 feet higher above the water than the old one, and it is thought that this will save it in case of another ice-gorge. The Watson Manufacturing Company had the iron work all completed within the extremely short time allowed by the contracts.

A law was recently passed by the New York Legislature and approved by the Governor, which amends a former law authorizing companies organized in New York to hold real estate in other States, so as to allow them also to buy and hold stock in other corporations holding such real estate. The law is general, but is understood to be intended to cover the case of the Erie purchases of stock in coal-mining companies in Pennsylvania.

Western North Carolina.

The judicial sale of the road is now appointed to take place at Salisbury, N. C., June 22.

The Court, at a recent hearing, refused to dissolve the injunction prohibiting the North Carolina Railroad Company from buying the road.

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CONDUCTED BY

S. WRIGHT DUNNING AND M. N. FORNEY.

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Editorial Announcements.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

THE COMING CONVENTIONS.

In another column we publish notices of the times and places of meeting of the various railroad and engineering associations which hold their annual assemblages about this season. Two of them, the Master Mechanics' and the Master Car-Builders', will be held this year in New York; and as the meeting of the former is close at hand, the note of preparation begins to be heard, and reception committees are holding meetings, and there are rumors of excursions, collations, music and other manifestations of hospitality which are intended to make the sojourn of the stranger agreeable in the metropolis.

Of the other and what should be considered the more important portion of the proceedings, we have thus far learned but little. One or two of the reports of committees are, we learn, completed, and others are well advanced towards completion. We have, however, the means of knowing that the circulars of inquiry have been neglected by a very large proportion of the members, and only a very small minority have taken the trouble to answer them. Doubtless many who have received the circulars have honestly intended at some vague and indefinite time to send their replies, and have laid them aside for that purpose, but have not done so because—well, for the same reasons that we neglect a great many other duties. Now to all such we want to say here that when this number of the *Railroad Gazette* reaches subscribers, there will still be time for circulars to reach committees before the Convention, provided they are answered at once, and then mailed promptly. Those members who have neglected this duty are therefore urged to attend to it within twenty-four or at most forty-eight hours after this paper reaches them. In this connection we will also repeat a recommendation we made last year, which was that master mechanics should consult with their foremen or with their most intelligent locomotive runners and mechanics in preparing the answers to circulars. There is not one of the subjects selected for consideration about which men who observe carefully could not make valuable suggestions. At the same time, such consultations bring about a more friendly feeling among subordinates and better understanding between them and their superior officers. There is, we know, among some officers an absurd idea that such consultations will lessen their influence with those over whom they must exercise authority. We would always interpret such a belief when held by a superior officer as an indication that he is unworthy of the position which he holds, and in some way incompetent to exercise his authority wisely. The effect of such frank consultations

would, we believe, result very advantageously to all parties, and we are sure that much more satisfactory replies would be given to the circulars if this plan were adopted. By requesting those who are to be consulted to meet the master mechanic in the evening after working hours, when there will be no interruption, all the circulars can be answered at one session with the assistance of a clerk. We will repeat, however, what we have said before, that if this is done, it must be done at once.

Regarding the reports themselves, we will act upon the principle that good advice gains strength by repetition, and we will renew the recommendation made before that the committees should aim to make their reports as short as possible. Last year and the year before, some of them were inordinately long. Now the writers of them should remember that the attention of an audience is very soon exhausted. A person who is driving a horse with a heavy load is considered a brute if he drives him too long without a chance to rest. If this is true of driving a beast, what shall be said when a large audience is driven very near "the ragged edges of despair" by having their attention exhausted by a person who does not measure their powers of endurance. It should be carefully kept in mind that an audience of more than a dozen people is always intellectually short-winded. Let those who do not believe it consult their preacher or their lawyer. It should be the aim of those who prepare the reports to economize as much as possible the attention of their audience, which is an extremely limited quantity. For this reason, all tabular matter and all long quotations from other authorities should be placed in appendices to be printed with the report but not read.

We learn that the suggestion made in the *Railroad Gazette*, a few weeks ago, that the committee should have the privilege of naming a certain number of persons to open the discussion on all reports, will be adopted at the next convention of the Master Mechanics' Association. We feel quite sure that if this plan is adopted it will result in very much better and fuller debate than would otherwise be given on the subjects presented. It would also have the effect of calling out those who have the most knowledge regarding special subjects, but who are too reserved or modest to volunteer to speak.

We also want to present a plea for the Master Mechanics' Association to those who have thus far held aloof from it. Especially is it desirable that the subject should be presented to those who occupy positions higher in authority than that accorded to those in charge of the machinery departments of our railroads. In some cases men occupying the latter positions have been deterred from becoming members because they felt that those above them did not regard the Association favorably. Some of the best men in the country are for this reason not members, and have taken no part in the proceedings. The reasons for the unfavorable regard in which the Association is held by such persons need not perhaps be fully rehearsed here. It is only necessary to say that perhaps none will be more ready to admit its shortcomings than those who have been its truest friends. It would, of course, be desirable that all its members should have a liberal scientific education and such a training that they can use the English language as forcibly as Herbert Spencer and describe the theory and the art of the mechanical engineering of railroads as clearly as Faraday or Huxley present scientific truth. Not only should the members have such knowledge, but they should have had opportunities for extended practical experience and observation, and, more than all, have clear and logical habits of thought, which are the result only of that profound love of truth, to possess which in its highest forms must be inherited in our blood, be taught to us in childhood, scrupulously practiced in early life, and defended in maturer years. We say it is desirable that the membership should be composed of men with such qualifications, but in saying that the Association is composed only of an average lot of superior mechanics, most of whom have had few advantages in early life and not very many since, we are giving evidence that they have not all the attainments which we have named as being desirable. Those who have studied life to very little purpose who have not learned that we are obliged, in order to accomplish anything much worth doing, to work with the material at hand. A general who wants to take his army across a swollen river is not very particular whether the timber he uses is of the exact quality or dimensions that he would like. He uses whatever he finds, the main thing being to construct a bridge strong enough to cross the river. So with the Master Mechanics' Association: it is composed of the only material of which such an association can be formed, and it is therefore a question whether those who desire a better one will come in and help to improve that which we have, or whether there shall be none.

There can hardly be a question, we think, that there is a great deal of work which can be done better by such an Association than in any other way. If it should receive the cordial support of the superior officers, it would, we believe, be capable of very much greater usefulness than now. With the growth of the railroad system of the country it becomes of immense importance that rolling-stock,

especially cars, should be constructed on some uniform system. This is only possible by a conference of those in charge of such work, the opportunity for which is afforded by associations such as the Master Mechanics' and the Car-Builders'.

We wish it were possible to make a non-mechanical man, as most railroad presidents and superintendents are, understand the very great inconvenience which results from the fact that the parts of cars are not duplicates of each other. Take, for example, bolts and nuts. Now, if they will imagine themselves in the position of a mechanic employed on car repairs; there are, perhaps, a hundred or more cars in the yard for repairs, many of which have lost nuts or broken bolts which must be replaced. Now comes the difficulty, however. The bolts and nuts are not of uniform sizes. A $\frac{1}{2}$ bolt in one car will be a thirty-second larger or smaller in diameter than another. One will have a screw with 10 threads, another with 9 and another with 11 or 12. The result is that the mechanic must either force on a nut which does not fit, and thus incur the risk of another breakage, or else he must waste time in getting a bolt or nut of the right size and proportions. The same thing is true of brass journal bearings. The sizes of these are almost innumerable, and the forms as various as the sizes. Tons of duplicates must be kept on hand to meet emergencies.

It is not of course alone in establishing standard forms and proportions for railroad machinery that such associations can be of benefit. The consumption of fuel, the wear of wheels, the construction of boilers, the purification of water, the keeping of accounts—all and many more need careful investigation. So fully convinced are we of the possibility of much greater economy in such directions, that, if it were possible to make a fair contract with almost any road of importance in the country to supply it with fuel, taking for profit half the economy which could be effected, or to furnish the car wheels on the same terms, we feel sure that a reasonably intelligent and capable engineer, of good business habits and fair acquaintance with the working of railroad stock, could make a magnificent income by such a contract.

Now it should be, and to a certain extent is, the purpose of such associations as will soon meet in New York to indicate how to economize in the operation of railroads; to collect statistics, to tabulate results, to record the results of experiments, and by discussion call out and publish information which without the aid of such institutions would be quite inaccessible to the public. We believe therefore that it would be to the interest of railroad companies generally if their managers would instruct their master mechanics and car builders to become members and attend the meetings of the associations referred to, and we would also recommend that the party of the first part should pay the expenses of such membership and attendance.

THE COST OF HANDLING GRAIN.

The investigation by a committee of the New York Legislature of the expenses connected with the transfer, handling and storage of grain carried over the Erie Canal is attracting attention to this important branch of transportation. The investigation was ordered, probably, to show that the canal tolls, made artificially high by the corrupt contracts for repairs and improvements, are yet a less serious tax on traffic than the terminal expenses, and to divert some of the public indignation from the country "rings" which live by extravagant profits on canal contracts to what they call city rings, which fatten on extravagant profits for elevating, transferring, weighing and storing grain. So far we believe that they have presented no evidence that there is any such combination as can be called a "ring" to secure extortionate terminal charges, or even that the existing rates are unduly high; for there has been no evidence to show how much the different services cost. But it has been very clearly shown that these expenses taken altogether form a large part of the cost of delivering Northwestern grain into European warehouses or ocean vessels.

The whole effect of such charges, however, is not yet sufficiently appreciated, we believe, because most people confine their attention to the matters before the Committee, which include terminal charges at only two ports, Buffalo and New York. If we follow the grain from the field of the producer to the home of the foreign consumer, or even to the ocean vessel which carries it to foreign ports, we shall see that "canal grain" is subject to several such expenses, and we shall be better able to understand why the railroads with imperfect facilities and much higher rates per mile have diverted from the canal most of the grain intended for domestic consumption, and much of that which crosses the sea.

The Northwestern grain-grower, whether he lives in Illinois, Wisconsin, Minnesota, Iowa, North Missouri, Nebraska or Kansas, hauls his grain from his farm to the nearest railroad station, where it is subject to its first "terminal expense." It may be put in a warehouse and stored at this station, in which case the owner usually pays for the service directly, but if it is put in the cars immediately the handling costs money and forms part of the

service for which freight is charged, and is made costlier if the facilities are imperfect.

Thence, if the grain is not shipped through to the East by rail, it goes without transfer to some lake port, and is there sold. At this place there is an expense, a legitimate one, though the charge may be extortionate, for transferring the grain from car to warehouse, or "elevator" as it is called, usually a charge for storage, direct or indirect, a commission for selling, a charge for "elevating out"—that is, for transferring from the elevator to the lake vessel—and then the grain starts on the second stage of its journey, having so far paid five tolls, exclusive of that recognized as the price of carriage.

The lake vessel brings the grain to the harbor of Buffalo or Oswego, where it must be transferred to canal boats. Grain is not often sold at Buffalo, and there is no commission there; but it is taken into an elevator at some expense, kept in the elevator a longer or shorter time at some expense, and transferred to the canal boat, also at some expense. This service may all be rendered for a single charge, but it almost always has these three elements of cost, which on the whole form the basis of the charge. Our five tolls have now become eight, and they have not advanced the grain a mile on its way.

The canal boats deliver the grain in New York harbor. If it is not to be shipped immediately, it is taken to a warehouse, probably in Brooklyn, the elevating in and storage, weighing and elevating out into the ocean vessel become necessary, and the grain is here sold again usually, and incurs a charge for commission, which, with the four other tolls, brings up the total to thirteen, besides the three transportation charges by rail, by lake and by canal.

But this is not the end of these expenses. After crossing the ocean the grain is subjected probably to two similar sets of them before the consumer gets it.

These services are all or nearly all indispensable in shipping grain by the canal route, and we shall not find fault with their existence; but we enumerate them to show that a comparatively small excess in each charge, whether owing to imperfect methods, or extortionate profits, is likely in the aggregate to amount to a considerable sum, and that therefore the ways and means of reducing the actual cost of performing these frequently repeated services are worth careful study and continued effort.

Now when grain is shipped through by rail from the producer's station to the exporting seaport, two sets of these expenses are entirely eliminated. There are no terminal expenses at the western lake port and none at Buffalo, and no commission at the former place. In the case of grain consumed in this country, the New York terminal expenses are also entirely eliminated, and the grain is taxed only with the charges at the producer's and those at the consumer's station, eliminating three sets of transfer charges and two commissions. This fact has already nearly destroyed the canal grain trade in consignments for domestic consumption at points which the canal boats do not reach. The car of grain loaded in Iowa is delivered without unlocking the doors at any station in Pennsylvania, New York or New England, and these States get most of their grain in that way now. Not so much is saved on grain exported, and the railroads therefore have hitherto made comparatively little progress in competing with the canal in this traffic.

They have made so much progress, however, that it has become probable that they will in time absorb most of it, unless expenses by the canal route are cut down to the lowest possible figures; and they have made so much that the lower terminal expenses at other cities are likely to divert more and more traffic from New York, unless there is a reform there. What we mean is, that the advantage in the low canal rates has heretofore enabled New York to afford a cheaper outlet than any other port, notwithstanding its higher terminal expenses; and that if the railroads shall be enabled to carry as cheaply as the canal, New York will no longer have the advantage of lower transportation charges to counterbalance its higher terminal charges. Then, it must reduce its terminal charges or lose its trade, for it will be competing on something like equal terms with other seaports.

New York thus has good reason for investigating its terminal charges in particular, as well as the subject of canal tolls and the other charges to which canal grain is subject. Only by keeping these down to the lowest point can it continue to afford the best outlet for grain exports, and only by continuing to afford the best outlet for grain exports can it preserve its present pre-eminent position as a grain exporter, one of the necessary corollaries of which is that it is the chief resort of shipping, and therefore the most favored in ocean rates and the cheapest place to which to import merchandise.

So far as the railroads are concerned, we doubt whether a monopoly of the grain transportation for export is desirable for them. Exports are always fluctuating in quantity, and usually large only when all other traffic is also large. Grain cannot be carried at all for export except at rates which leave a very narrow margin for profit, and any increase in this traffic taken from the water route will add not a whit to traffic in the other direction, or to any other traffic. If the water route for grain to the sea should be

cheapened one-half or more (as possibly it may be by the improvement of the St. Lawrence route), we believe the Eastern railroads would profit by it, as the Western railroads would certainly and immensely. The continued rapid growth of the West is worth more to the Eastern railroads than the diversion of its present grain exports from the lakes and canals. That growth adds largely to the traffic westward and to traffic in both directions which pays a good profit. No probable water route is likely to divert any considerable shipments of merchandise, cattle and provisions from the railroads, but a very cheap one would probably increase immensely their traffic in these articles and in passengers, as well as the grain movement on Western railroads and on the water route.

With Minnesota, Wisconsin, Iowa, Missouri and the productive parts of Kansas and Nebraska as well peopled and as productive as Ohio, the railroads between Lake Michigan and the Atlantic would have an enormously increased traffic without carrying any grain for export, and the railroads west of Lake Michigan would have such a traffic as they never yet dreamed of.

Probably, however, the cheap water route, if we ever get one, will be a direct result of the competition of the railroads, which we now find threatening the Erie Canal traffic and the New York grain exports, and thus rousing the people of that city and State to an effort to reduce the expenses of their water way, which more than anything else has given it its commercial supremacy.

FREE PASSES.

The practice of granting free passes to officials has become prominent recently by the enjoining of the New York, New Haven & Hartford Company from giving passes to municipal, state, or national officers, at the suit of a stockholder. And the event was impressed on the public mind by the fact that almost immediately afterwards the President of the United States and suite, on their way to attend the centennial commemoration of Concord fight, while going to a train of this road at the Grand Central Depot in New York were stopped at the door by the guard and required to show their tickets, like other honest people; which not having, they had to resort to the ticket agent and pay for them, just as other travellers do. Perhaps the President has never before been asked to pay fare, and we know how a custom easily becomes prescriptive, as it were; a sort of law which people (especially those who profit by it) follow without thinking of its causes or effects or its propriety. But to all those who have to pay their fare, the reported scene at the Grand Central Depot must have exhibited very painfully the impropriety of such a custom. It is no easy to see why the President or a member of Congress or of the Legislature might not as properly order a suit of clothes of a tailor and neglect to pay for it as to ride to Boston without paying the fare; and the inevitable effect of the public knowledge of such free riding is to make people suspect that the favors are granted with the hope that they may be reciprocated, and that, on the whole, they do have an effect, rendering the officials apt to think well of those who have favored them, and give them undue consideration, if nothing more. In the case of members of State legislatures and judges, this suspicion is extremely harmful. They are frequently called upon to decide questions in which the railroad companies are interested, and it is not easy to make the community believe that they are entirely unaffected by the fact that they are receiving from these companies what amounts to a pension of perhaps a hundred or several hundred dollars a year. The whole practice, we believe we may say, is extremely unpopular with the community; but it does not often appear so, because it is just those people who usually express public opinion that are favored with the passes. Newspapers say little about it, because most editors are accustomed to travel on passes; and public officers, we may be sure, will not talk much of favors that they receive which would be regarded with suspicion by the public. The best and richest newspapers now quite generally refuse these suspicious favors; but doubtless a great majority are only too glad to get them. And, indeed, as things go, it is not easy for them to do without them. Most newspapers, like other undertakings, are subject to a severe competition, and it needs all the dollars as well as all the brains at the command of their conductors to enable them to hold their own with their competitors, and travelling expenses often form a considerable item of the expenditures. Thus, so long as the railroads give passes to newspapers on request, the one which refuses to ask them while its competitor makes free use of them cannot do as much good work with the same amount of money. It is shackled by its very independence. But if neither can get such favors, they stand on an equal footing, and one man's money will go as far as another's in getting news and presenting it. It is a fair field and no favor that the high-minded man wants, but he doesn't get it if a railroad company gives his less scrupulous competitor all the passes he can use.

The Northwestern railroad companies for the most part have substantially abolished this least excusable of unjust discriminations, and we believe that they have had no cause to repent the step. The Philadelphia & Reading for more than a year has discontinued the practice, and though it has by no means ceased on most Eastern railroads, it has been more limited than heretofore, we believe, and the advisability of abolishing it has been brought to the attention of managers as never before. The new Pennsylvania Constitution forbids it, though this prohibition probably does not affect corporations which are older than this constitution.

The object of the New York, New Haven & Hartford stockholder in suing for an injunction was doubtless to deprive members of the Connecticut Legislature of their usual free riding. It was cunningly devised for that purpose; for though the injunction is not final, it must remain in force until tried, and cannot be tried until the next term of Court, which is not held until after the session of the Legislature. The issue of the trial for a permanent injunction will be awaited with interest. We believe no such case has ever been tried.

In a suit of this kind, the stockholder cannot well plead that the practice of granting passes has a demoralizing effect. It is an injury to him as a stockholder that he must complain of. And if he urges that in this way the company to which he belongs is deprived of some fares, it would doubtless be rejoined that passes are given in the hope of affecting business; that they often procure the most effective and cheapest advertising; that the officers of a company are the proper judges of the efficiency of methods of working the road and securing its welfare, and that the granting of passes is one of these methods.

Aside from the reply in the case in hand, that Government officials are not in position to render legitimate services to a railroad company, there is another which may be urged very properly, and, we think, effectively. Whether the railroad company is in any way benefited or not by the issue of free passes to influential men, the officer granting the passes gains consideration by it, and may often secure personal favors by the exercise of this peculiar privilege of giving away his employer's property. The man to whom governors, members of Congress and of legislatures, cabinet officers, mayors, leading editors and the like come for valuable favors is an influential personage, with a wide circle of influential and perhaps desirable acquaintances, who are likely to be sincerely desirous of doing him a good turn and giving him a good name. They will be slow to listen to and still slower to publish anything they may hear to his discredit, though it may be evidence of his unfaithfulness to his company. That is, the good will purchased by passes in reality is not felt toward the company, but toward that particular servant of the company who distributes the passes, and who may use this very good will, secured by a distribution of the company's property, to strengthen himself in a position where he defrauds the company; to conceal from its stockholders his dishonesty, dishonesty, or simple inefficiency. And no doubt free passes are quite often used for this purpose. The official contrives to manufacture a reputation as an able and faithful servant of his company by putting under obligations those persons who may have frequent occasion to speak of him either publicly or to the influential men of his company. The skillful use of a book of blank passes over an important route will soon gain for a man a reputation as one of the ablest railroad men of the country—perhaps not a very solid reputation, but one which shines very bright, nevertheless, and dazzles many a not extraordinarily vain man. Now, the stockholder certainly has a right to have such a use of passes enjoined. It brings him and his company no possible benefit, and may work them serious injury. But as this is one of the things very difficult to prove, it will not often be practicable to ground a complaint upon it. However, if general attention can be attracted to the subject for a considerable time, we hardly think it will be necessary to apply to the courts; the companies will put an end to the practice by their own motion, and be the gainers by it in more ways than one, not the least of which will be some abatement of popular prejudice and suspicion.

Conventions.

The following conventions of engineering and railroad societies will be held within the next few weeks:

MASTER MECHANICS' ASSOCIATION.

The eighth annual convention of the American Railway Master Mechanics' Association will be held at the Cooper Institute in New York, beginning Tuesday, May 11. The St. Nicholas Hotel has been selected as headquarters for members. The following are the subjects selected for discussion and the committees appointed to report on them:

1. *The best material, construction, operation and management of locomotive boilers.*—J. M. Boon, of the Pittsburgh, Fort Wayne & Chicago; J. A. Jackman, of the Chicago & Alton; and G. W. Cushing, of Chicago.

2. *Purification of feed-water.*—The Committee to report what methods, up to this time, have been most approved for the improvement of feed-water by chemical and mechanical means, and for the prevention of incrustation: Horace A. Towne, of

the Northern Pacific Railroad; Coleman Sellers, of Philadelphia; Harry Elliott, late of the Ohio & Mississippi; Wm. Wilson, of the Chicago, Burlington & Quincy, and H. V. Faries, of the Atchison, Topeka & Santa Fe Railroad.

3. *Locomotive tests.*—The Committee to request members to make experimental tests to show the performances of locomotives, and to report the results to the Association: M. N. Forney, of the *Railroad Gazette*; Professor R. H. Thurston, of the Stevens Institute of Technology, and W. Woodcock, of the Central Railroad of New Jersey.

4. *Locomotive construction.*—This Committee to report, as far as possible, all new methods of construction which have been adopted by members during the past and for the coming year. J. Stedley of the Lake Shore & Michigan Southern, L. S. Young, of the Cleveland, Columbus, Cincinnati & Indianapolis, and Howard Fry, of the Philadelphia & Erie Railroad.

5. *The best system of signals for operating railroads.*—This subject to include train head signals, train tail and side signals, road or station switch signals, and appliances for indicating the speed of trains. John Thompson, of the Eastern, A. B. Underhill, of the Boston & Albany, and John Orton, of the Great Western Railway of Canada.

6. *Locomotive and tender wheels.*—This Committee is to report breakages of wheels and tires, removals of tires, and causes of breakage or removal, and to report on the different methods of construction and of manufacturing various kinds of engine and tender wheels.

J. N. Lauder, of the Northern of New Hampshire; G. W. Stratton, of the Pennsylvania, and S. A. Hodgman, of the Philadelphia, Wilmington & Baltimore Railroad.

7. *Construction and improvements of continuous train brakes during the ensuing [past] year and their application to cars and locomotives.* Chas. R. Peddle, of the St. Louis, Vandalia & Terre Haute; F. Gould, late of the Missouri, Kansas & Texas, and George Richards, of the Boston & Providence Railroad.

8. *Lubricants for locomotives.*—F. B. Miles, of Philadelphia; H. D. Garrett, of the Pennsylvania, and Edwin Garfield, of the Hartford, Providence & Fishkill Railroad.

10. *Standard Axles.*—M. N. Forney, of the *Railroad Gazette*; Coleman Sellers, of Philadelphia, and Gordon H. Nott, of Boston.

11. *Broad and narrow-gauge rolling stock.*—W. S. Hudson, of Paterson, N. J.; H. N. Sprague, of Pittsburgh, and H. G. Brooks, of Dunkirk, N. Y.

12. *Machinery for supplying water to tanks.*—The Committee to give description of engine, windmill or device, with cost of working same. J. L. White, of the Evansville & Crawfordsville; J. H. Flynn, of the Western & Atlantic, and Howard Fry, of the Philadelphia & Erie Railroad.

Mechanical laboratory.—The Committee to take into consideration the propriety of establishing a mechanical laboratory: W. A. Robinson, of the Great Western of Canada; Reuben Wells, of the Jeffersonville, Madison & Indianapolis; J. M. Boon, of the Pittsburgh, Fort Wayne & Chicago; N. E. Chapman, of the Cleveland & Pittsburgh, and H. M. Britton, of the White Water Valley Railroad.

The Committee of Arrangements for the Convention this year are H. G. Brooks, of Dunkirk, W. M. Strong, of the New York & Harlem, and J. Van Vechten, of the Erie Railway.

MASTER CAR-BUILDERS' ASSOCIATION.

This association will hold its annual convention on Wednesday, June 9. The hotel selected for the accommodation of members is the Grand Central, No. 671 Broadway.

As there are several hotels of similar name in New York, strangers in the city should be careful to name the Grand Central, as there are the Grand Hotel and Grand Union besides.

AMERICAN SOCIETY OF CIVIL ENGINEERS.

This Society will hold its Seventh Annual Convention in Pittsburgh on the 8th, 9th and 10th of June.

Record of New Railroad Construction.

This number of the *Railroad Gazette* has information of the laying of track on new railroads as follows:

Easton & Amboy.—The line has been extended westward 2½ miles to the east end of the Musconetcong Tunnel, 50 miles from the eastern terminus at Perth Amboy; and west of the tunnel the line has been completed from Phillipsburg, N. J., east to the west end of the tunnel, 10 miles.

This is a total of 12½ miles of new railroad, making 208 miles completed in the United States in 1875, against 347 miles reported for the same time in 1874 and 598 in 1873.

"A NEW SWINDLING ISSUE" (*Ein neuer Emissionsschwindel*) is the title of a series of leading articles which have recently appeared in the *German-American Economist* of Frankfort-on-Maine, in which are discussed the contents of a French prospectus of an "improvement company" which purports, we believe, to purchase the Denver & Rio Grande Railway, construct some 2,300 miles more of it in Colorado and New and Old Mexico, get possession of enormous estates of land on the line, construct irrigation works, and sell the land that cost it 50 cents and a dollar an acre for \$20 to \$50 for farms and \$1,000 for town lots at a hundred new towns to be founded on the lines of the road. There are many other things which the company proposes to do, by which it holds out to investors in it the promises of enormous profits, concerning which the *Economist* seems to be incredulous, as it is of the good faith of the projectors of the company. We have no doubt, however, that they do intend to make a great deal of money out of the scheme—for some one. We have heard nothing said of the company in this country; but we think it a grievance that a scheme with so many millions in it and so sure of success should not be offered to American investors. We see the money market reports quite "call loans" in New York at 3 to 4 per cent., and "prime mercantile paper" at 5½ to 7, and we feel sure that some of the capitalists who have been compelled to accept such meager returns on their money would like extremely well to put it where a dollar can

be turned into a thousand, or even into twenty. It must have been a great deal of work to get up that French prospectus of three or four hundred pages, and we think it might all have been saved simply by demonstrating in Wall street the certainty of the prospects of about one-half of the profits promised to the Frenchmen; and we are very anxious that such a mint of money should not go out of the country. How shall we ever resume specie payments if all the profits of this great improvement go to France? But there is little hope of our sharing in the profits, we fear. Three French counts and a marquis are in the Council of Administration, and join in inviting their countrymen to share in the vast fortune which Americans permit to escape them.

General Railroad News.

ELECTIONS AND APPOINTMENTS.

Detroit, Lansing & Lake Michigan.—Mr. P. A. Shaver has been appointed Master of Transportation and Train Master of the Eastern Division (Detroit to Ionia), with headquarters at Detroit, Mich.

Southern Pennsylvania.—At the annual meeting in Reading, Pa., April 19, Col. James Worrall was chosen President, with the following directors: George Hench, E. M. Clymer, Daniel Ermentrout, Diller Luther, Heister Clymer, P. S. Ernold, Horatio Trexler, William H. Clymer, Charles B. McKnight, Jeremiah Hagenman, R. Milton Speer, Christian Stolz. The board elected F. J. Groveton, Secretary and Treasurer.

South New Jersey.—This company has been organized at Woodstown, N. J., by the election of the following directors: Jonathan Colson, Joseph L. Duell, Barclay Edwards, James Gardiner, George Horner, E. B. Humphreys, James D. Lawson, William S. Mattison, James P. Michellon, Jacob H. Mounce, L. S. Pancoast, George M. Tatum, Benjamin L. Taylor. The board elected Wm. S. Mattison, President.

Detroit, Monroe & Toledo.—At the annual meeting in Detroit, April 20th, the following directors were elected: Augustus Schell, New York; William Williams, Buffalo; William L. Scott, Erie, Pa.; Amasa Stone, H. B. Payne, Stillman Witt, Geo. B. Ely, C. P. Leland, Cleveland; Albert Keep, P. Morehouse, Chicago; Warner Wing, Monroe, Mich. The road is leased by the Lake Shore & Michigan Southern.

Davenport & St. Paul.—Mr. John L. Kellogg has been appointed General Freight and Ticket Agent.

Texas & Pacific.—At the recent election of directors the following were elected for the current year: Thomas A. Scott, Frank S. Bond, Matthew Baird, W. H. Houston, John McManus, E. D. Barclay, Philadelphia; M. O. Roberts, H. G. Stebbins, H. G. Marquand, New York; W. M. Harrison, Jefferson, Tex.; Nesmyth, San Diego, Cal.; W. H. Walters, Baltimore; Alfred Gaither, Cincinnati; W. C. Hall, Louisville; J. N. McCullough, Pittsburgh, Pa. Two vacancies remain to be filled. Col. Thomas A. Scott was re-elected President; Frank S. Bond, Vice-President; E. B. Hart, Secretary and Treasurer; W. H. Abrams, Land Commissioner. Mr. Abrams, who was formerly connected with the Kansas Pacific, succeeds Ex-Gov. Throckmorton, who has resigned.

Hot Springs Branch.—The officers of this company are: President, Joseph Reynolds; Directors, P. H. Ellsworth, Wm. Flemming, James F. Bassett, George P. C. Rumbough. The office of the company is at Hot Springs, Ark.

Northern Pacific.—Mr. Charles B. Wright, of Philadelphia, has been chosen President in place of Gen. G. W. Cass, resigned on account of his appointment as Receiver. Mr. Wright has been for five years a director and Chairman of the Finance Committee.

St. Albans Iron & Steel Works.—At the annual meeting in St. Albans, Vt., recently, the old board of directors was re-elected, as follows: Philo Remington, Ilion, N. Y.; Isaac Osogood, Utica, N. Y.; A. O. Brainerd, Guy C. Noble, J. D. Soule, E. A. Smith, F. S. Stranahan, St. Albans.

Pemberton & Hightstown.—At the annual meeting in Hightstown, N. J., April 15, the following directors were chosen: Nathaniel S. Rue, James W. Allen, Alexander Shreve, Joseph Holmes, Colon B. Miers, Nicholas Wain, Jr., John G. Stevens, Ashbel Welch, Richard Stockton. The board subsequently elected Nathaniel S. Rue, President; James W. Allen, Vice-President; James L. Rue, Secretary; Colon B. Miers, Treasurer. The road is leased to the United New Jersey Company and subleased to the Pennsylvania.

Missouri River, Fort Scott & Gulf.—Mr. J. E. Lockwood has been appointed General Ticket Agent and A. H. Campbell, Purchaser and Paymaster, in place of Mr. Allan Bourne, who held the two former offices.

Atchison, Topeka & Santa Fe.—Mr. Egbert has been appointed Assistant Superintendent, in place of W. H. Bancroft, resigned.

St. Louis, Kansas City & Northern.—Mr. B. W. Lewis, Jr., has been chosen President, *pro tem.*, to fill the vacancy caused by the death of Mr. Hoge. Mr. Lewis is a prominent business man of St. Louis.

Great Western Dispatch.—Mr. H. R. Duval is to be General Manager of the consolidated Great Western and Erie & Pacific Dispatch fast freight lines.

United States Railroad Mutual Life Insurance Association.—At the annual meeting in Cincinnati, April 21, the following officers were chosen: President, Franklin Fairman, Illinois Central; Vice-Presidents, P. P. Young, Atlantic & Great Western; O. P. McCarty, Indianapolis, Bloomington & Western; A. J. Sleeper, Kansas Pacific; Wm. S. Cottinger, Pennsylvania; E. V. Cherry, Indianapolis, Cincinnati & Lafayette. Executive Committee, C. D. Alexander, Pennsylvania; O. C. Briggs, Philadelphia & Reading; M. R. Wood, Chicago, Rock Island & Pacific; R. O. Jones, Pittsburgh, Cincinnati & St. Louis; W. G. Gale, Baltimore & Ohio. Finance Committee, Charles McGinley, Philadelphia & Reading; David McKnight, Pennsylvania; James W. Allen, West Jersey.

Ashley River.—The stockholders met in Charleston, S. C., April 20, and organized the company by electing A. F. Ravenel President, with the following directors: T. G. Barker, R. R. Bridgers, C. S. Gadaden, G. E. Gibbon, T. D. Jervey, C. O. Witte.

New York, Boston & Montreal.—The New York Supreme Court has appointed Daniel Butterfield Receiver in a suit for debt.

Breuninger & Frankford.—At the annual meeting in Milledale, Del., April 15, the following directors were chosen: John Hickman, John T. Long, E. W. Cannon, Ebe W. Tunnell, Benj. Burton, Wm. S. Phillips, of Delaware; Messrs. Bell, Moore and Henderson of New York. The last three are new directors, replacing Henry Hickman (deceased), G. H. Wright and Wm. A. Gum. The board elected John Hickman, President, and Wm. A. Gum, Secretary and Treasurer.

Michigan Central.—Mr. Allan Bourne has been appointed Purchasing Agent. He has been connected for six years past with the Missouri River, Fort Scott & Gulf, as General Ticket Agent and Purchaser.

Toledo, Peoria & Warsaw.—Mr. C. M. Higginson, late chief clerk of the Locomotive Department of the Chicago, Burlington

& Quincy, has been made Secretary of the Receiver and Storekeeper.

Boston, Hoosac Tunnel & Western.—Mr. F. W. D. Holbrook, formerly Assistant Engineer and Superintendent of the Burlington & Missouri River Railroad in Nebraska, has accepted an appointment as Division Engineer of the above line, with office at Shelburne Falls, Mass.

St. Louis, Iowa & Minnesota.—The first board of directors of this new company is as follows: H. L. Huff, George Staley, Samuel R. Edgington, E. W. Eastman, J. C. Moorman, T. G. Williams, J. C. Narrum, John Hall, J. H. Cusack.

St. Louis, Lawrence & Western.—At the annual meeting, April 12, the following directors were chosen: James Blood, S. L. Clark, T. C. Darling, J. P. Devereux, Joel Grover, W. Hadley, O. E. Learned, T. L. Marshall, J. Q. A. Norton, J. K. Rankin, J. P. Usher. The board elected J. P. Usher, President; O. E. Learned, Vice-President and Secretary.

Mobile & Ohio.—At the annual meeting in Mobile, Ala., April 20, the following directors were chosen: J. J. Walker, W. H. Pratt, M. Waring, H. Hall, of Alabama; A. J. Gillespie, A. Murdock, of Mississippi; A. F. Elliot, of Louisiana; W. P. Halliday, A. B. Safford, of Illinois; Wm. Butler Duncan, R. K. Dow, W. H. Hays, W. E. Kimball, of New York. The only new directors are Messrs. W. E. Kimball and A. B. Safford, who take the places of David Uley and W. D. Dunn.

Atlantic & Pacific Telegraph.—At the annual meeting in New York, April 28, the following directors were chosen: Oliver Ames, Elisha Atkins, S. L. M. Barlow, Benj. E. Bates, T. Gordon Dexter, Sidney Dillon, G. M. Dodge, Thomas T. Eckert, William H. Guion, Jay Gould, C. P. Huntington, L. M. Mills, J. H. Mortimer, C. J. Osborne, G. G. Sampson, James D. Smith, E. D. L. Sweet, W. J. Syms, Henry M. Taber.

PERSONAL.

—Mr. Julius H. Pratt, the chief promoter of the Montclair Railroad and for several years its President, has gone into bankruptcy. He was interested largely in real estate speculations and owns a great deal of unimproved property.

—Mr. Bartholomew Vrooman, one of the oldest railroad men in New York, died suddenly in Geneva, N. Y., recently, at the age of 75 years. He was a contractor on the Albany & Schenectady and Auburn & Rochester roads and on several lines in Massachusetts, and was for a number of years Road Master on the western end of the New York Central.

—Mr. Wm. H. Hathaway, Foreman of the car shops of the Toledo, Wabash & Western Railway, died April 18. He had been in the service of the road from the time it was first built.

—Mr. Wm. K. Nimick, who died in Pittsburgh, April 19, was for many years a large stockholder and a director of the Allegheny Valley Railroad Company. He was extensively engaged in the iron manufacture and had acquired considerable wealth.

—Mr. H. R. Torrey, late Foreman of Round House of the Chicago, Burlington & Quincy Railroad at Aurora, has entered the service of the United States Rolling Stock Company.

—Mr. M. W. Torrance, Superintendent of the Western Division of the New York Central & Hudson River road, has resigned, in consequence of the consolidation of the Western and Middle Divisions of the road.

TRAFFIC AND EARNINGS.

Flour and Grain Movement.

For the week ending April 17, receipts and shipments are reported as follows:

	1875.	1874.	Inc. or Dec.	P. & E.
Flour—				
Lake ports' receipts.....	99,818	114,603	Dec. 14,785	12.9
Lake ports' shipments.....	103,174	107,266	Dec. 5,908	5.5
Atlantic ports' receipts.....	301,140	198,477	Inc. 102,663	1.3
Wheat—				
Lake ports' receipts.....	576,988	815,209	Dec. 238,221	29.3
Lake ports' shipments.....	373,568	966,847	Dec. 593,279	61.4
Atlantic ports' receipts.....	518,060	664,742	Dec. 146,682	21.9
Corn—				
Lake ports' receipts.....	528,087	994,525	Dec. 466,438	46.9
Lake ports' shipments.....	381,688	518,959	Dec. 137,271	26.4
Atlantic ports' receipts.....	1,040,596	1,426,210	Dec. 385,614	37.8
Grain of all kinds—				
Lake ports' receipts.....	1,550,696	2,229,785	Dec. 679,089	33.3
Lake ports' shipments.....	979,639	1,737,044	Dec. 757,405	43.5
Atlantic ports' receipts.....	1,897,444	2,448,903	Dec. 551,459	23.5

The shipments from lake ports for four weeks have been for the weeks ending with the dates at the heads of columns below:

	March 27.	April 3.	April 10.	April 17.
Flour.....	88,368	114,275	98,552	103,174
Grain.....	987,241	1,054,587	1,132,915	979,539

There is thus no increase in shipments as yet. It would be natural for holders to keep back their grain to ship by lake, but that rail rates leave little to be saved by the cheapest water conveyance.

Coal Movement.

Week ending April 1:

	1875.	1874.	Inc. or Dec.	P. & E.
Anthracite, tons.....	217,779	446,561	Dec. 228,782	51%
Semi-anthracite, Broad Top and Clearfield.....	27,618	.....	.....	.....
Cumberland.....	47,555	.....	.....	.....
Bituminous, Western Pa.....	29,518	.....	.....	.....
" West Va.....	3,105	.....	.....	.....
Coke, Western Pennsylvania.....	13,471	.....	.....	.....

Lumber Production.

The following estimates of last Winter's cut in the lumber districts of Northwestern Michigan are published by local papers:

	Feet.
Logs at mill in Gratiot County.....	17,000,000
Logs cut on Grand River and tributaries.....	183,000,000
Logs cut on Saginaw River and tributaries.....	655,000,000

Total.....855,000,000

This is for the districts whose outlets are on Lake Huron, and does not include the immense production which is shipped at Lake Michigan ports.

For the week ending April 24 receipts at Chicago were 61,747 barrels of flour and 1,285,802 bushels of grain of all kinds, against 61,811 barrels of flour and 1,766,250 bushels of grain for the corresponding week of last year. There is a decrease in all grains. The shipments for the week were 47,886 barrels of flour and 456,028 bushels of grain of all kinds, against 55,678 barrels of flour and 2,412,341 bushels of grain of all kinds for the corresponding week of 1874. The grain shipments were thus less than a fifth of last year's, navigation not being open either year during that week.

Iron Movement.

Receipts of iron ore and pig iron at St. Louis for the first quarter of 1875 were:

	January.	February.	March.	Total.
Iron ore, tons.....	3,980	3,115	4,610	11,705
Pig iron, ".....	2,41	3,861	4,079	10,471
Total.....	6,421	6,976	8,689	22,177

The Anthracite Coal Miners' Strike.

Contrary to general expectation the miners in the Schuylkill region when the question was submitted to them by the officers

of their society, gave a nearly unanimous vote in favor of continuing the strike. A long fight is now looked for, as the companies are determined not to give way, believing that to do so is practically to abandon to the men the control of the business. The few private operators are so dependant upon the great companies, who control all the transportation lines that they cannot act without their consent. There appears to be a very bitter feeling against the coal companies among the miners, especially against the Philadelphia & Reading Company, and some of the mines continue to be guarded by State troops, the local authorities being unable to preserve the peace.

Not only the railroads but the iron furnaces and rolling mills of the Schuylkill and Lehigh valleys have been much embarrassed by their inability to get coal enough to supply their daily needs. There has been little trouble so far as domestic consumption is concerned, that demand being pretty well supplied by the large stocks on hand at the beginning of the strike and the continued production in the Lackawanna region.

Montreal Lake Traffic.

This season there is to be a daily line of steamers between Montreal and Lake Ontario ports, and a tri-weekly line from Montreal to Milwaukee and Chicago and two steamers will ply between Lake Superior and Montreal. The fleet will consist of 18 first-class steamers, connecting with the Allen line of ocean steamers between Montreal and Liverpool. Most of the freight, it is said, will be transferred at Kingston, as cheap barges will do the river work so much cheaper than lake steamers as to more than counterbalance the cost of transferring.

Lake Freights.

Though the first contracts taken for corn from Chicago to Buffalo were reported at 4 1/2 to 5 cents per bushel, it is said that already, before navigation has opened, vessels are chartered at 4 cents, which is probably the lowest rate ever made for the opening trip of a vessel.

Railroad Earnings.

Earnings have been reported by the following companies:

Year ending December, 31.	1874.	1873.	Inc. or Dec.	P. c.
Atchafalpa & Nebraska.....	\$353,205	\$372,655	Dec. \$19,450	5 1/2
Expenses.....	270,325	285,283	Inc. 14,958	10 1/2
Net earnings.....	\$82,880	\$127,372	Dec. \$44,492	35
Earnings per mile.....	2,350	2,494	Dec. 144	5 1/2
Per cent. of expenses.....	76.53	66.92	Inc. 9.61	16 1/2
Logansport, Crawfordville & Southwestern.....	\$249,973	.....	.....	.....
Expenses.....	329,774	.....	.....	.....
Deficiency.....	\$79,801	.....	.....	.....
Earnings per mile.....	2,118	.....	.....	.....
Per cent. of expenses.....	131.92	.....	.....	.....
Missouri River, Fort Scott & Gulf.....	\$693,400	\$707,982	Dec. \$14,582	2
Expenses.....	409,470	492,658	Dec. 83,179	16 1/2
Net earnings.....	\$283,930	\$215,324	Inc. \$68,606	31 1/2
Earnings per mile.....	4,334	4,425	Dec. 91	2
Per cent. of expenses.....	69.05	69.59	Dec. .54	16 1/2
Mobile & Ohio.....	\$2,391,019	\$2,801,127	Dec. \$410,108	14 1/2
Expenses.....	1,683,154	2,023,971	Dec. 340,817	16 1/2
Net earnings.....	\$707,865	\$777,156	Dec. \$69,291	8 1/2
Earnings per mile.....	4,537	5,428	Dec. 891	18 1/2
Per cent. of expenses.....	70.39	67.70	Inc. 2.69	4
Year ending March 31:	1874-75.	.....	.....	.....
Keokuk & Des Moines.....	\$752,725	.....	.....	.....
Earnings per mile.....	4,675	.....	.....	.....
Three months ending March 31:	1875.	1874.	.....	.....
Michigan Central.....	\$1,553,734	\$1,806,422	Dec. \$252,688	14
Midland of Canada.....	44,710	49,370	Dec. 4,660	9 1/2
St. Louis & Southeastern.....	254,523	319,257	Dec. 64,734	20 1/2
Month of March:	.....	.....	.....	.....
Peoria & Rock Island.....	\$31,386	.....	.....	.....
Expenses.....	19,252	.....	.....	.....
Net earnings.....	\$12,134	.....	.....	.....
Per cent. of expenses.....	61.53	.....	.....	.....
Philadelphia & Erie.....	\$262,286	\$247,626	Inc. \$14,660	1 1/2
Expenses.....	163,143	182,400	Dec. 19,257	7 1/2
Net earnings.....	\$99,143	\$65,226	Inc. 33,917	29
Earnings per mile.....	876	880	Inc. 4	1 1/2
Per cent. of expenses.....	66.65	73.66	Dec. 7.01	9 1/2
Second week in April:	.....	.....	.....	.....
Denver & Rio Grande.....	\$7,539	\$6,061	Inc. \$1,478	24 1/2
St. Louis, Iron Mt. & So.	77,800	69,982	Inc. 7,818	29 1/2

THE SCRAP HEAP.

A Testing Machine Wanted.

The Board appointed by the President of the United States to make tests of metals, asks for proposals for the construction of a machine suitable and convenient for subjecting to either tension or compression specimens of iron, steel or other metals of all lengths up to 45 feet, and of any width up to 30 inches. The machine must have a maximum testing capacity of 800,000 pounds and be capable of accurately measuring strains. The machine is to be furnished complete with all necessary tools and driving machinery, and with holding down bolts ready for erection. It must be delivered within five months from date of contract. It will be further demanded that the machine shall be taken back in part payment for a machine of 2,000,000 pounds, testing capacity at an early date, which may be specified in the proposals, and upon terms which may be stated in full. Satisfactory guarantees will be required and a penalty of \$100 per day in case of non-fulfillment of contract. The general proportions of the machine must be based upon a factor of safety of six.

Proposals will be received until June 1. They must be accompanied by complete specifications and general working drawings showing dimensions of the principal parts. They must be addressed to the President of the Board, Lt.-Col. T. T. S. Laidley, U. S. A., Watertown, Mass. The privilege is reserved of rejecting any or all proposals.

Railroad Manufactures.

The Baltimore Car Wheel Company's Works in Baltimore are fully employed, and the company is considering the question of enlarging them shortly.

The Putnam Machine Company, of Fitchburg, Mass., recently shipped a heavy car-wheel borer to the Vermont Central shops at St. Albans, Vt., and another one to Texas.

The Vulcan Iron Works at South St. Louis (Carondelet) are re-rolling a lot of rails from Texas.

A nine-ton narrow-gauge locomotive built by Porter, Bell & Co., recently hauled six freight cars loaded with grain and one passenger car up the Hopewell grade of 105 feet to the mile on the Peach Bottom Railroad.

British Rail Exports.

For the month of March the total exports of railroad iron of all kinds are reported by the Board of Trade as follows:

Tons.....	1875.	1874.	Decrease.	Per cent.
Value.....	\$1,369	\$1,992	\$623	50.4
.....	\$319,190	\$285,094	\$34,096	62.2

The exports to the United States were only 4,092 tons this year and 11,047 last, against 20,552 in March, 1873.

For the three months ending with March the total British exports were 102,926 tons in 1875 against 159,903 in 1874, but while

the decrease in quantity is little more than a third that in value is nearly one-half. The decrease in quantity indicates a general depression in railroad construction the world over. In iron of all kinds there has been an increase in the quantity exported, but not even low prices have been effectual in stimulating the demand for rails.

The exports of railroad iron to the United States for the first quarter for three years have been:

Tons.....	1873.	1874.	1875.
Value.....	\$9,453	\$8,025	\$9,013
.....	\$269,819	\$277,661	\$115,630
Average price.....	\$12 10s. 6d.	\$13 9s. 6d.	\$12 14s. 6d.

The movement in the price is not at all expressed by the average price of imports given above, the fact being that most of the importations in 1873 were of iron, and since that time scarcely anything but steel has been taken. This year's imports are about enough to lay a hundred miles of track, while the amount really needed for renewals alone for one quarter on our roads in operation can hardly be less than 2,000 miles.

Exports of Locomotives.

The United States Treasury returns for the last fiscal year (ending June 30, 1874) show exports of 79 locomotives, having an invoice value of \$1,147,366, the average value being \$14,524. Of these the largest number, 19, went to Chili; Russia took 14, Brazil 13, Cuba 12, Canada 9, Argentine Republic 4, Mexico and Central America each 3, and Peru 2. The number recorded as sent to Canada is undoubtedly less than the number really built for Canadian lines, as a large lot were built in the New England shops for the Grand Trunk, these, however, being probably delivered to that road at Portland, and not counted among the exports.

Preservation of Cross Ties.

The Engineer says:
"Railway sleepers injected with sulphate of copper will be preserved indefinitely, provided the copper remains in its original combination with the ligneous tissue. But Mr. Max Paulet shows that on railways where carbonate of lime exists in the stone ballasting of the track or in the soil, the carbonate gradually penetrates the wood and substitutes the copper. Decay then follows, for carbonate of lime is not a good agent."

OLD AND NEW ROADS.

Continued from Page 172.

Macon & Brunswick.

The bondholders met in New York, April 22, and appointed a committee with authority to buy in the road on their behalf at the sale in June next, and to hold it and operate it, and make such arrangements for a reorganization as may be necessary or expedient.

Central, of Minnesota.

It is stated that arrangements have been made by which this road will be run in connection with the Southern Minnesota, giving it business to that road.

There is talk of an extension this Summer from Wells southward, to a connection with the Central of Iowa.

Chicago, Rockford & Northern.

This company, which is to build the road from Rockford south to Rochelle, to connect with the Chicago & Iowa, has been advertising for 75 teams and 100 men, to work on the grading of the road.

Cincinnati, Cumberland Gap & Charleston.

The damages done to this road, by the recent floods in East Tennessee have been repaired and the running of trains from Morristown, Tenn., to Wolf Creek has been resumed.

Kansas City & Memphis.

A dispatch from Springfield, Mo., says: "The Kansas City & Memphis Railroad, of which Col. John M. Richardson is President, was to-day leased to Maj. Chas. Sheppard and others. Considerable feeling is manifested in consequence of so fair a prospect of the early completion of this road. Work on the road-bed is completed between this city and Greenfield ready for the iron. Heretofore all attempts to obtain possession of the road have failed."

Wilmington & Reading.

Application has been made to the United States Circuit Court in Philadelphia by some of the bondholders for the appointment of a receiver and an injunction against the sale of the road by the sheriff. Mr. Baer, of Reading, appeared in Court and agreed to withdraw the suits in which judgments had been obtained and to join in proceedings for foreclosure, provided a receiver could be appointed. The case was adjourned over to this week, and pending the hearing the sheriff's sale has been adjourned from April 22 to May 6. It is probable that the foreclosure suit will proceed, and that the other suits, which were to recover money on unpaid coupons, will be dropped.

Pittsburgh, Cincinnati & St. Louis.

A Logansport (Ind.) dispatch says: "The police have succeeded in breaking up an organized gang of car thieves in this city, headed by three brothers named Wright, who for months past have been robbing this road of a large quantity of freight. Their mode of operation was to board trains in the city and open the cars by means of keys obtained from ex-employees of the company, and then outside the city throw the goods off, which were picked up by their comrades. A large quantity of goods were recovered at Wright's house. A grocer of this city, John K. Kattl, was arrested to-day for selling the goods. Nine arrests have been made, and the police have warrants for several others."

Central Branch, Union Pacific.

This road has been seized by the United States Collector, for failure to pay the 5 per cent. tax on its earnings. It will be sold May 8, unless the tax is paid, or other legal proceedings intervene. The claim is about \$18,000. The running of trains is not interfered with.

St. Joseph & St. Louis.

Immediately after the annual meeting in St. Louis, April 29, a special meeting of the stockholders was to be held, to vote on the question of ratifying the lease of the road to the St. Louis, Kansas City & Northern Company.

Missouri, Iowa & Nebraska.

This company has made a new offer to build an independent line into Keokuk, Ia., and a new bridge over the Des Moines River, provided the people of Keokuk will give the right of way and depot grounds needed, and raise \$20,000 in money for the road.

St. Louis & Eastern.

A company by this name has filed its articles of incorporation with the Secretary of State of Illinois. The road is to extend from East Carondelet eastward to the Wabash River at Mount Carmel. The capital stock is to be \$10,000,000, and the incorporators are C. P. Chouteau, Malcolm Henderson, C. C. Simmons, A. F. Dorman, G. F. Hilgard, D. R. Garrison, Andrew Dorman, S. H. Parks, A. X. Illinsky, E. Rutz and Gos Velle.

Ohio & Mississippi.

The offices of the Auditor, Treasurer, etc., of the former Springfield & Illinois Southeastern road, now the Springfield

Division of this road, are to be removed to St. Louis and consolidated with those of the main line. Mr. C. A. Beecher will remain in charge of the road as Superintendent.

It is said that a new track will be put down on the Springfield Division from Pana, Ill., to Tower Hill, seven miles, between which points the track of the St. Louis, Alton & Terre Haute road is used.

Lewiston & Auburn.

A meeting of the stockholders was held April 22, when the lease of the road to the Grand Trunk Company was ratified, and it was determined that the suit pending in the United States Circuit Court should be dismissed and there was a discussion as to what measures shall be taken to pay certain bills against the company.

Atlantic, Mississippi & Ohio.

This company has been experimenting in the use of coal instead of wood for its engines, and it is stated, has ascertained that a considerable saving can be made by its use. Further trials are to be made, and if they are successful the necessary changes in the engines will be made. It is probable that Tennessee coal will be used.

St. Louis, Iowa & Minnesota.

The object of this recently-organized company is to purchase the Central Railroad of Iowa and to complete it from Albia, Ia., to the north line of the State of Missouri, and from Northwood to the south line of Minnesota. The capital stock is fixed at \$9,500,000.

For the purchase of the first-mortgage bonds of the Central road, the company is authorized to issue an income bond in amount not to exceed \$4,700,000, the same to be secured in the payment of its principal at the end of thirty years by a first mortgage on the property purchased of the Central Company, from the Minnesota line to Albia, and a second mortgage from Albia to Moulton, or the north line of Missouri, this mortgage to be a lien on the net earnings of and receipts from the property mortgaged, save and except on that from Albia south, until the same shall annually pay 7 per cent. on the bonds issued. The indebtedness of the company, aside from that of the issue of the income bonds, shall not exceed \$1,000,000.

Keokuk & Des Moines.

A correspondent informs us that the contract for the grading of the new line between Buena Vista and Sand Prairie has been awarded to Mr. Tim Ford, of Keokuk, Ia., and he has given a bond in \$10,000 for the early completion of the work. Operations have already commenced with a large force of men and teams.

Missouri, Kansas & Texas.

It is stated that the trouble between this company and its employes has been settled and that the General Manager, Col. B. B. Stevens, who has been in New York some time, has returned to Sedalia with full authority to make all necessary changes. It is also stated that Mr. Chappell, the General Superintendent, and Mr. Dorwin, the General Ticket Agent, will shortly retire from their positions.

Indiana & Illinois Central.

This road was sold at auction under foreclosure of mortgage in Indianapolis, April 26. It was bid in for \$50,000 by Messrs. Fahnestock and Mumford, as representatives of the bondholders. The new owners, it is stated, will at once organize a new company and will complete the line to Indianapolis as soon as possible.

The road is 85 miles long from Montezuma, Ind., west to Decatur, Ill. It was built in 1872 and 1873.

Maine Central.

A new round-house of brick, to hold 40 engines, is to be built at Waterville, Me., this summer.

On suit of a stockholder, the United States District Court has granted a preliminary injunction to restrain the company from paying and the State Treasurer from collecting the tax assessed under the present law. The Judge remarked, on granting the injunction, that all the principles involved were covered by decisions of the Supreme Court.

Louisiana Pacific.

A bill has been submitted to the Louisiana Legislature by the New Orleans Chamber of Commerce chartering a company by this name to build a railroad from New Orleans to connect with the Texas & Pacific at Shreveport. The company asks for no subsidies except exemption from taxation for a term of years. The incorporators include some of the prominent business men of New Orleans.

Pennsylvania & Delaware.

The Pennsylvania end of this road is to be sold as well as the Delaware section, the sale being advertised to take place May 6 by the Sheriff of Chester County. The sale is to be made under a judgment for \$15,662.64 obtained by Wm. A. Bell for bridge work done on the road. The road will be sold subject to a first mortgage of \$1,083,000 and a second mortgage of \$519,000. The stock, which will be wiped out by the sale, is \$900,000. The road is 38 1/2 miles long, from Pomeroy, Pa., on the Pennsylvania Railroad, southeast to Delaware City, and 22 1/2 miles of it are in Pennsylvania, the remaining 16 being in Delaware. The bonded debt is at the rate of \$41,610 per mile, which is probably in excess of the value of the road. It has been worked by the Pennsylvania Railroad Company since its completion in 1872.

Chicago & Northwestern.

It is reported that this company has finally concluded to finish the new shops just outside of Chicago on the Galena Division. The estimated cost is about \$250,000, and the work is all to be done this summer. The buildings are to include one shop for blacksmith work and iron-working machinery, 80x300 feet; one building for wood-working machinery, two stories high, 80x300 feet; two erecting shops, 80x300 feet each; one paint shop, 80x300 feet; one store house, 50x300 feet; one oil house 40x50 feet; one boiler shop, 80x200 feet; and possibly a foundry. The buildings are to be constructed of brick, and, with the exception of the one designed for wood-working machinery, will be one story high, the outside walls to be 20 feet in height.

New Jersey Railroad Legislation.

Among the bills passed by the New Jersey Legislature at its recent session were the following:

Act to authorize the Belvidere Delaware Railroad Company to issue bonds and to secure the same by mortgage.

Act relating to railroads sold under mortgage, authorizing the formation of a new corporation, consolidation of road with another, etc.

Supplements to the charters of the West Jersey, the New York & Long Branch, the Longwood Valley, the High Bridge, the Red Bank & Rumson Neck, the South Mountain & Boston, and the Bridgeton & Port Norris Railroad companies.

Act granting certain powers to the Central Stock Yard & Transit Company for the preservation of their property, maintaining order upon their premises, and punishing offenders.

Logansport, Crawfordville & Southwestern.

There is trouble among the employes, and it is expected that they will strike unless their wages are paid up very soon.

Chicago, Saginaw & Canada.

The first installment of the iron has been received, and track-laying will be begun very soon. The road is graded for 40

miles westward from St. Louis, Mich., the terminus of the Saginaw & St. Louis road, and the iron for this section is all to be delivered by June 1. The railroad bridge over the Saginaw River is ready for the iron work.

Welland Canal Improvement.

It is reported that the work on this improvement is making rapid progress, and that it is probable that there will be a clear way for vessels drawing twelve feet of water from Chicago and Duluth to Quebec within three years. An effort is being made to have a further enlargement to admit vessels drawing 14 feet.

East Tennessee, Virginia & Georgia.

Some time since Peter A. Shearer brought suit to recover \$500,000 from this company as penalty for a large number of violations of a State law requiring the train-men to call out in each car at each station the name of the station and the length of the stoppage. The law has never before been enforced. The case came up recently in the Circuit Court at Morristown, Tenn., and was dismissed, Mr. Shearer having failed to furnish the required security for payment of costs.

Memphis & Little Rock.

The Little Rock (Ark.) *Gazette* says: "All reports relative to the rebuilding of the shops at Forrest City, Lonoke, or other stations, are without foundation. They will be rebuilt either in Argenta, at or near the Fort Smith railway crossing, or in this city. The general office of the company will, in all probability, be removed to Little Rock in less than three months."

Canadian Pacific.

The present position and prospects of the line are thus summed up by the Toronto (Ont.) *Monetary Times* of April 16: "The Eastern terminus of the railway has been fixed near Burnt Lake, a point about 30 miles south of Lake Nipissing. To connect this end of the road with our existing railway system, Parliament has voted a subsidy of \$12,000 per mile to the Canada Central, to enable it to extend its road to wherever the junction may be, near Burnt Lake. This extension will be about 120 miles, and we understand the work is to be immediately proceeded with. From Burnt Lake to the mouth of French River—a stretch of 85 miles—we have what is known at present as the Georgian Bay Branch, although we have been informed on high authority that it may yet be a part of the main Pacific line. Others, however, believe this to be geographically impossible. The contract for this section has been let to Senator Foster (since resigned) the price being \$10,000 per mile in cash, interest at 4 per cent. for twenty-five years on the sum of \$7,500 per mile, and 20,000 acres of land per mile; the railway to be retained by the contractor, who is bound to run it under such regulations as the Governor-in-Council may order. Whether any individual can long be compelled to run a railway at a loss, if loss there should be, is doubtful.

"Montreal and Quebec are to be put in connection with the Georgian Bay Branch by the extension of the Northern Colonization Railway, and Toronto, Hamilton and the West, by means of the continuance of the Northern Extension or some other railway—a distance of about 65 miles. The Governments of Ontario and Quebec are expected to assist existing railway companies in making these connections, and when completed, there will be continuous railway communication both from the east and west with the mouth of French River on the Georgian Bay.

"From the mouth of French River there is uninterrupted water communication (unless the Sault Ste. Marie Canal may be considered an exception), with Thunder Bay, the western extremity of Lake Superior. From Thunder Bay to Lake Shebandowan is a distance of 45 miles, and Parliament has just approved of the contract entered into with Messrs. Sifton & Ward to construct a railway between these points. The contract price is \$406,194, but this does not, of course, include rails. This piece of road, as also the Georgian Bay Branch and Canada Central Extension, has to be completed by the 1st of January, 1879.

"From Lake Shebandowan to Rat Portage at the northwest corner of the Lake of the Woods, we have another long water stretch. By an improvement to be made at Fort Francis, the number of portages are to be reduced, but there will still remain several between Shebandowan and Lake of the Woods. Some of them are quiet short, but they must continue to be a great drawback to the Dawson route, and will prevent its being very attractive even after the railway sections are completed. With the exception of these portages, however, there is safe and pleasant sailing all the way to Rat Portage, the scenery in some parts being very striking and beautiful.

"From Rat Portage to Winnipeg, or we should more properly say to the Red River, is a distance of about 114 miles. There is a narrow, shallow neck at one part of Lake Manitoba, about 900 feet wide. It has been decided that the railway shall cross there, instead of going down to Winnipeg, as the bend necessary to reach that town would, it is estimated, cost \$1,100,000 additional. The first 37 miles westward from Rat Portage is a very hilly, rocky country, the termination of which is near Cross Lake. The tenders sent in to the Government for the construction of this section were so high, in some cases, and the amounts so different, that it is proposed to make further surveys, and possibly ask new tenders. The work will not be much delayed, however, as Parliament gave the Government power to let the contract without waiting for its ratification. From Cross Lake to Red River, 77 miles, the contract has been awarded to Messrs. Sifton & Ward, the price being a lump sum of \$402,950, exclusive of rails. This is \$5,293 per mile.

"It is confidently expected that this mixed rail and water route will be completed for the season's business of 1877. It now takes about two weeks to get from Ontario or Quebec to Manitoba through our own territory, and it is expected that the improvements now placed under contract, will reduce the time from Montreal or Toronto to four or five days. If passengers or shippers prefer an all-rail route they can use the American railways, and reach Manitoba via Pembina, for that branch of the Pacific road was put under contract to Mr. Joseph Whitehead last fall, and we believe the grading of a considerable portion of it has already been completed. It is expected to be finished this fall. As it is generally understood that the section of the Pacific Railway north of Lake Superior will be left to the last, the country being very rough and barren, we suppose our business with the Northwest will have to be done by the Dawson route, or partly by American railways, for many years to come. It remains to be seen whether this will prove satisfactory."

Gilman, Clinton & Springfield.

During a heavy wind-storm on the afternoon of April 8 the round-house of this road at Clinton, Ill., was blown completely down, the walls falling in and letting the heavy roof down on the engines, of which there were two in the house, which were thoroughly demolished. The loss is about \$40,000.

Pueblo & Arkansas Valley.

This new company organized in the interest of the Atchison, Topeka & Santa Fe, has filed its articles of incorporation in Colorado. The Pueblo *Chieftain* thus describes the route: "Commencing at Granada it will extend up the Arkansas Valley to Pueblo, thence westerly by way of the Tennessee pass to Salt Lake. From this trunk line a branch extending to Trinidad and Santa Fe is provided for. We are informed that the Kansas & Colorado and the Pueblo & Salt Lake companies will both consolidate with this new organization, and that the

work of construction from Granada to West Las Animas, and thence to Pueblo, will be pushed with commendable dispatch."

Jefferson City, Lebanon & St. Louis.

The contract with the Central Railway Construction Company of St. Louis provides that work shall be commenced within thirty days, and the road completed to the Cole County line ready for the cars by November next. The road is to be a first-class narrow-gauge, and to be finished and provided with first-class rolling-stock. No bonds are to be given to the company until the road is completed and all demands for labor and material are paid or satisfactorily adjusted. Sixty days after date the board of directors of the company is to issue mortgage coupon bonds, on road and its appurtenances, to the amount of \$5,000 per mile; these bonds will be placed in the hands of John B. Lionberger, President of the Third National Bank of St. Louis, as trustee. When the road is completed according to contract, and upon the order of the President of the railroad company, the said Lionberger is authorized to deliver the mortgage bonds to the Construction Company; also agreed that when the road is completed and accepted, the Construction Company are to receive \$60,000 in bonds of Jefferson Township and \$20,000 in city bonds, upon the Construction Company giving security as required by the condition upon which said \$20,000 in bonds were voted—that they will operate said road for a period of five years. The Construction Company also give a bond to extend the road 20 miles from the Cole County line within 18 months.

East Tennessee & Western North Carolina.

The Knoxville *Whig and Chronicle* says: "It is stated that this road, leading out from Johnson City, has changed hands, the Pennsylvania Steel Company having purchased it. The road will probably be extended to the Cranberry Iron Works in North Carolina."

Virginia Railroad Law.

An amendment to the existing law provides that no railroad, canal, steamship or other transportation company shall charge a greater sum for the transportation of any passenger or freight over a portion of its line or route, whether such shall in whole or in part be within the limits of this State, than is charged by such company for the transportation of the like class of passengers or freight over the entire length of its line. No company shall charge any higher rate for passengers or freight going over its line from any place in this State to any place outside than is charged for the same class of business within the State. No higher rates shall be charged on business coming from out without the State to any point within it than is charged on business passing through the State. No company or other common carrier shall allow through tickets or through baggage checks to be issued over its line by any company or transportation line, its agents or agencies, not incorporated by the State, which company or line shall refuse or inhibit by any means any such company or transportation line incorporated by the State the privilege of issuing by its own local agents and such agents or agencies as it may establish in any city or elsewhere through tickets and baggage checks over such company's road or transportation line not incorporated by the State.

All discrimination to individuals is prohibited. The penalty for violation of the law the first time is \$500, and any succeeding time \$5,000, to be recovered in any court of record. An injunction can also be issued by a circuit court to prevent repetition of any of the acts forbidden.

Chicago, Danville & Vincennes.

A conflict of jurisdiction between the State and Federal Courts appears possible. Judge McRoberts of the Illinois Circuit Court having decided that the removal of the Osgood suit to the United States Circuit Court was invalid, as the petition for removal had not been verified, and the required bond had not been submitted to this court for approval. Subsequently another petition and bond were submitted to him, and he reserved his decision upon them. It is not thought, however, that the United States Court will relinquish its jurisdiction.

Messrs. Brown and Hammond, the receivers appointed in the Osgood suit, have filed a bill in the Circuit Court against Judson, Tenney and Young, to compel a conveyance of certain lands bought for the company by Young, and transferred by him to Charles Judson and John Tenney. These lands were bought for depot grounds and other purposes, but instead of buying them in the name of the company, the deeds were all made in the name of John E. Young as trustee. These lands, it is claimed, were all bought and improved with the company's money, and were subsequently conveyed by Young to the parties named, who are relatives of Wm. D. Judson and Amos Tenney.

Bondholders are requested to call at the office of Chase, Higginson & Co., Drexel building, Wall street, New York, and sign the agreement recommended by the committee.

Rhinebeck & Connecticut.

The ballasting and finishing up is completed and the road is to be opened for traffic May 1. It is 35 miles long, from the Hudson River at Rhinebeck, N. Y., northeast to the Poughkeepsie & Eastern at Boston Corners. Arrangements have been made for the use of the latter road from Boston Corners to the Connecticut Western at State Line, six miles, for a fixed annual rent of \$10,000. The road was built mainly to carry coal eastward from the Delaware & Hudson Canal Company's depot at Rondout, on the Hudson opposite Rhinebeck.

Connecticut Central.

The grading is about half completed from East Hartford, Conn., to a point about six miles from the Massachusetts line. The contractors have just begun work on this last section.

Houston & Texas Central.

It is reported that this company is trying to negotiate a large amount of its second-mortgage bonds for the purpose of raising money to pay off the floating debt.

Philadelphia, Wilmington & Baltimore.

The Baltimore *Gazette* says: "It has been ascertained from officers of the company, that the publications on Wednesday in reference to the refusal of the company to pro-rate with the Baltimore & Ohio Railroad on freight charges, were substantially true. The Philadelphia, Wilmington & Baltimore Railroad Company, some two weeks since, refused to pro-rate with the Baltimore & Ohio Railroad Company, and has not reduced its ante bellum rates. In consequence of that refusal, the Baltimore & Ohio Railroad Company now transports its freight, on special rates, by Shriver's Erie line of steamers, going by canal, between Baltimore, Philadelphia and New York. The time occupied in transshipment is considerable."

Bookford, Rock Island & St. Louis.

The United States Circuit Court has made a final decree, ordering the payment to H. H. Porter, of \$20,453.44, in full compensation for all his right and title in certain cars built by the Barney & Smith Manufacturing Company for the road, under a special contract which was subsequently assigned to Mr. Porter.

Baltimore & Potomac.

At a meeting of the directors in Baltimore, April 21, a contract with the Union Railroad Company in reference to its tolls over its road to Canton was read, and verbal changes, not substantially altering its force and terms, were considered, after which the proper officers were authorized to sign it.

A contract with the Western Maryland Company was ratified and ordered to be signed. It establishes charges for freight and

passengers over the Baltimore & Potomac Railroad, from the junction with the Western Maryland in Baltimore, to the proposed depot of the latter company on the east side of Jones' Falls. The terms named are 35 cents per ton for freight, 10 cents each way for single tickets, 6 cents each way for return tickets, and 4 cents each way for excursion tickets.

The people on the line of the Pope's Creek Branch are trying to secure more train accommodations.

Toledo, Peoria & Warsaw.

The Court has ordered the payment to Messrs. Secor & Tracy, trustees, of \$4,000 each, as compensation for their services as receivers up to the appointment of Mr. Hopkins as receiver in February. It was also ordered that Mr. R. G. Ingersoll be paid \$6,320 for legal services.

Louisiana & Missouri River.

The Chicago & Alton Company has begun suit in the United States Circuit Court, in St. Louis, against the Louisiana & Missouri River and other parties, to enforce its lien upon the property. The amount claimed is a balance of about \$100,000 advanced for construction work, and about \$100,000 interest coupons paid for the company by the Chicago & Alton. That company now asks to be substituted for the original holders of the coupons in their rights.

Long Island.

It is proposed to build a branch about five miles long from Brentwood, N. Y., south to the Great South Bay near Islip. Connection would be made there with a boat line to Fire Island.

New York and Eastern.

The Connecticut Superior Court, at Bridgeport, has been hearing the petition of Stanton & Balch, the contractors, for the appointment of a receiver. Among the charges made by the petitioners are, that the company has not spent the 10 per cent. of the stock required by law upon the road; that it has virtually ceased to exist, and that what property it possessed has been partly used by some of the directors, to pay their own bills with.

New Haven, Middletown & Willimantic.

The Messrs. Seymour, of Bridgeport, Conn., have begun a suit to foreclose the first mortgage. They claim to represent over \$2,000,000 of bonds, and say that the holders desire to get possession of the road, when they will organize a new company, and put it in good condition.

New York, Providence & Boston.

The Rhode Island Legislature has passed a bill authorizing this company to increase its capital stock to \$4,000,000. It is now \$2,500,000.

South New Jersey.

This company has been organized under the general law, for the purpose of building a narrow-gauge railroad from Woodstown, N. J., northeast, to the West Jersey, at Woodbury, a distance of about 16 miles. The capital stock is to be \$200,000, of which \$50,000 are already subscribed.

Portland & Oxford Central.

The stockholders met recently and voted, as the corporation is hopelessly in debt and unable to redeem its mortgaged property, to release to the trustees in trust, for the benefit of the bondholders, all the mortgaged premises, the same to be held by the bondholders as absolutely as the corporation would have owned them if no mortgages had existed. Another meeting will be held May 3, to learn the decision of the bondholders.

The running of trains was stopped some time ago by the Maine Railroad Commissioners, on account of the unsafe condition of the road. We believe the offer to surrender the property to the bondholders was made once before, but not acted upon. The road is 27½ miles long, from the Grand Trunk at Mechanics' Falls northward to Oxford, Me.

Western, of Alabama.

Notice is given to holders of past-due coupons of the first-mortgage bonds of the Montgomery & West Point Railroad, to send said coupons to the Central Railroad Bank, Savannah, Ga., or Georgia Railroad Bank, Augusta, Ga., previous to May 6 next, that the same may be paid in accordance with the requirements of the decree of the Chancery Court of Montgomery, Alabama, under which decree the Western Railroad of Alabama, which includes the road formerly known as the Montgomery & West Point, was sold. Holders not sending their coupons as requested must look to the Court for their payment.

New Castle & Wilmington.

The Philadelphia, Wilmington & Baltimore Company, lessee of this road, gives notice that it will now buy at par, with interest added from January 1 to May 1, 1875, the stock of this company. After May 1 no interest or dividends will accrue on the stock.

Railway.

Several new directors have been chosen in place of others who have resigned, and the re-organized board is preparing to push the work on the road. Most of the right of way has been secured, some work done, and a large part of the stock subscribed. The road will be about three miles long, from Rahway, N. J., to a connection with the New York & Long Branch road.

Plymouth, Kankakee & Pacific.

A special Commissioner of the Circuit Court of Putnam County, Ill., advertises to sell all the road-bed in the State of Illinois, some land which the company owns in Hennepin 420 ties, and all the franchises and other property of the company in Illinois to satisfy a judgment obtained by Mr. Thomas J. Nicholl, who was the Chief Engineer of the road, which is for less than \$4,000, we understand. The sale of the ties will be absolute, that of the road-bed and franchises subject to redemption in accordance with the law concerning real estate sales. The claim is under a lien, which precedence of mortgages. The sale is to be made May 1 at Hennepin, Ill.

McGregor, Marshalltown & Southwestern.

This company has filed articles of incorporation with the Secretary of State of Iowa. The capital is to be \$300,000, and the road is to run from Marshalltown, Ia., westward or southward.

Kalamazoo, Lowell & Northern Michigan.

Contracts for grading on the Hastings Division have been let to H. G. Carter, H. King, A. Benson & Co. and B. Mitchell, all of these commencing work at once. The company is now receiving bids for the sections of the Kalamazoo Division. The profile and specifications are with the Secretary, Col. Dumbas, at Kalamazoo, Mich.

Norwich & Worcester.

A survey is now being made, under charge of Mr. Charles A. Allen, of Worcester, for the long proposed extension from Allyn's Point, Conn., southward to Groton.

New York & Oswego Midland.

The trouble with the Sullivan County farmers who tear up the rails and level the road-bed continues, notwithstanding the issue of one or two injunctions from the United States Circuit Court. One man has been arrested for contempt of court. The land-owners claim that they never received consideration for their land, and now that the road is abandoned the property reverts to them, and they have a right to resume its use. One

man, a Mr. A. J. Bennett, who owns a mill at Buck's Eddy, adopted a new method of removing the track. Having taken out the joints at each end of a section, he fastened to one end a long chain, the other end of which was secured to the shaft of his water wheel. The wheel being started up, the chain wound up and the section of track was hauled bodily from its place. A former conductor has leased a passenger train and, with the consent of the receivers, is running it on his own account between Delhi and Sidney, where he connects with the Albany & Susquehanna, thus giving a limited accommodation to the Delhi Branch and a section of the main line. A mixed train is also run between Oswego and Norwich.

Easton & Amboy.

The track on the eastern end has been extended from the point last noted $2\frac{1}{2}$ miles to the eastern end of the Musconetcong Tunnel, 50 miles from the tide-water terminus at Perth Amboy. The work on the second track is well advanced and the rails are being laid. On the western end one track is down from Phillipsburg, N. J., east to the western end of the tunnel, 10 miles, leaving only a mile of track through the tunnel to complete the road ready for the passage of trains. The work of enlarging the tunnel to its full size is progressing steadily, and will be completed in a very short time.

New Mail Route.

Daily postal-car service has been ordered over the Baltimore & Ohio Railroad, from Grafton, W. Va., by way of Newark and Chicago Junction to Chicago, 559 miles.

New York, Boston & Montreal.

On application of P. H. Shields, a creditor holding a judgment of about \$650 against the company, the New York Supreme Court has entered an order sequestering the property of the company, and appointing Daniel Butterfield Receiver. The company did not put in any defense.

Pennsylvania—New York Division.

Much complaint has been made lately of the failure of the company to supply a sufficient number of cars on the local trains. A number of regular passengers determined to make a test question as to the obligation of the company to furnish cars, and accordingly one day last week some 20 passengers for Newark, who were standing up, refused to give up their tickets unless they were furnished with seats. The conductor threatened to put them off, but finally allowed them to pass. It is expected that a test case will be made up, unless the company supplies more cars.

Orders have been issued to collect, hereafter, 10 cents extra fare from all persons not provided with tickets, who pay their fare in the cars. Heretofore the additional charge has been only five cents. The conductors are ordered to give the passenger so paying a receipt-check, and the extra charge will be refunded on presentation of this check at any ticket office. This, of course, is intended as an additional check on conductors.

United States Railroad Mutual Life Insurance Association.

The annual meeting was held in Cincinnati, April 21, a number of delegates being present. The President made an address, setting forth the condition of the society and its work, and calling attention to some matters needing correction, chiefly the delay in collecting assessments. The Secretary's report showed that 3,140 members have been connected with the society since its organization. During the past year 469 members withdrew for various reasons, leaving the total number 1,755. The disbursements for the year were \$1,104.80, the receipts \$397.93; assessments amounting to \$45,995 were paid on the death of 82 members.

Several amendments relating to the duties of officers and the payment of entrance fees by members were adopted. The next annual meeting will be held in Philadelphia on the third Wednesday in June, 1876.

Central, of New Jersey.

Preparations have been begun for the opening of the Long Branch line, and the depot in Jersey City is to be enlarged by an additional platform and two or three lines of rails. A large passenger traffic is expected for the summer. It is expected that the Long Branch trains will begin to run about June 15.

Chicago, Milwaukee & St. Paul.

Work has been begun on a new tunnel through a ridge 160 feet high and a quarter of a mile wide, near Greenfield, Wis., on the La Crosse Division. The object of its construction is to cut down the steep grade on the present line to one of 25 feet to the mile. The new tunnel is near the present one, and when it is completed both will be used. The contractors for the work are Harrison & Green, of Milwaukee, who have one year in which to complete it. The cost is estimated at \$110,000. The old tunnel has never been properly arched.

Red River & Rio Grande.

A meeting was held in Denison, Tex., April 20, to organize this company, which has a charter and a land grant of 16 sections per mile from the State of Texas for a railroad from Denison to the Rio Grande at Eagle Pass, nearly 800 miles. The incorporators are mostly parties interested in the Missouri, Kansas & Texas.

Fitchburg & Manchester.

It is proposed to build a railroad from Fitchburg, Mass., northeast to Manchester, N. H., about 30 miles, through a somewhat rough and hilly country. The Fitchburg Board of Trade is discussing the project.

Worcester County Central.

In connection with this projected road there is talk of building a branch from East Brookfield, Mass., southwest through Fiskdale and Stafford to Rockville, Conn. This, with the Hartford, Providence & Fishkill road, would make a new line from Worcester, Mass., to Hartford, Conn.

Philadelphia & Reading.

President Gowen has presented to the Investigating Committee of the Legislature a protest declaring that the law under which the committee acts is unconstitutional. He also protested against the appearance of private parties before the committee except as witnesses. He has been summoned to appear before the committee as a witness. The committee held a session April 22 to examine the charters of the railroad and the Coal & Iron companies, and then adjourned until May 14.

The Improvement of the Mouth of the Mississippi.

Capt. James B. Eads, in pursuance of his contract with the Government for improving the mouth of the Mississippi on the Jetty system, has sub-let a contract for constructing 350,000 yards of fascine work, and 100,000 cubic yards of stone work. Also, a large amount of timber work, piles, etc. The contractor is Col. James Andrews, of Alleghany City, Pa., who built the stonework of the St. Louis bridge and the tunnel. Col. Andrews is a well known contractor of large means. He is to furnish at his own cost steamers, tugs, barges, boats, pile-drivers, and all necessary appliances, and is to put in 60,000 yards of the work before he receives any pay. As the work progresses he is to receive \$300,000, the balance to be paid him only after the Government pays Capt. Eads. The first payment Capt. Eads is to receive is to be when 20 feet of water shall have been secured. Every time two additional feet, up to 30 feet is secured, he is to receive \$500,000 more.

By the terms of the contract with Col. Andrews, half of these

payments are to be received by him, and the other half, until the completion of the work, will be held to secure the advances made by the South Pass Jetty Company. A company has been formed under this title, with a capital stock of \$750,000, but Capt. Eads thinks that it will be necessary to call in only \$300,000 of this amount. The company, in consideration of its advances, is to have 10 per cent. interest on them, and 100 per cent. profit, secured like the advances themselves. One condition of Col. Andrews' contract is, that he is to do as much as is necessary to insure 26 feet of water, and construct the amount of work specified for \$2,500,000. A part of this compensation, however, is only to be paid after 30 feet of water is secured.

The Government is to pay Capt. Eads \$5,250,000 for the work, on his securing 30 feet of water. Col. Andrews' contract embraces a large part, but not all the work that will be required. There are very strong parties interested in the contract. He is to commence the work as soon as the South Pass Jetty Company's stock is subscribed to the amount of \$300,000. A large portion of it is already subscribed, mainly by citizens of St. Louis.

Panama.

A new contract has been concluded with the Pacific Mail Company, the terms of which appear to be very favorable to the railroad. The Pacific Mail Company guarantees the railroad the same number of passengers as heretofore, and \$40,000 per month of through freight, and one-third of the freights received from the banana business, a large and growing trade. The local rates on Central American business are to be divided as heretofore. The Pacific Mail Company also agrees that all the coal sent by it from New York to Panama, shall go over the railroad, and be paid for at the rate of \$5.25 per ton. The contract is only temporary, and can be terminated in 30 days' notice by either party.

West Wisconsin.

The company gives notice that the funded interest bonds are now ready for delivery. Bondholders are requested to send in their coupons to the New York Guaranty and Indemnity Company, No. 52 Broadway, New York, and receive the bonds in exchange for the same.

Cincinnati, Hamilton & Dayton.

The stockholders' committee, appointed at the meeting of March 25, has nominated the following ticket to be voted for at the approaching annual meeting: F. H. Short, Oliver Perrin, L. B. Harrison, Joseph Rodgers, C. W. West, Samuel Fosdick, Rufus King, J. F. Kilbreth, Robert Brown. Of these only Messrs. Short, West and Fosdick are in the present board. Stockholders are requested to send their proxies to the committee (B. B. Whitman, John A. Murphy and Robert Brown), at the office of the Merchants' and Manufacturers' Insurance Company, Cincinnati.

RAILWAY ASSOCIATION OF AMERICA.

Proceedings of Third Annual Meeting.

The convention was called to order at the Southern Hotel, St. Louis, March 10, 1875.

PRESENT:

Col. W. R. Arthur, General Superintendent St. Louis, Kansas City & Northern Railway.
B. S. Stevens, General Manager Missouri, Kansas & Texas Railway.

W. F. Downs, General Superintendent Central Branch Union Pacific Railroad.

J. C. McMullin, General Superintendent Chicago & Alton Railroad.

B. F. Mathias, Superintendent Paris & Danville Railroad.

Colonel Arthur in the chair.

The Secretary explained that the President, Hon. Thomas Allen, had intended to be present at the convention, but that business had detained him in New York beyond his anticipation. In like manner three other St. Louis officers were unavoidably absent from the city.

The Secretary presented the President's address and a financial statement.

The following resolution was moved and adopted:

"Resolved, That the Secretary is instructed to print in pamphlet form the President's address and statement, and that a copy thereof be sent to every railroad company in the United States and Canada."

Also that the Secretary be instructed to address to every railroad company in the United States and Canada a circular, calling attention to the advantages offered by an Association such as this, as described in the President's address, and submitting to vote the following:

1. That an organization such as that of the Railway Association of America can be made of great service to the railroad interests of this country.

2. That the Railway Association of America should be sustained by all railroad companies of the United States and Canada.

3. That in order to place the Association on a permanent basis as recommended in the address of the President, a convention should be held, at which all railroad companies which can conveniently send delegates should be represented.

Also, that the Secretary, having taken the vote, shall publish the same in full, and shall address to those who voted "aye," a call to meet in convention in St. Louis, at some convenient early day, to arrange for permanent organization and work to be undertaken during the ensuing year.

Also resolved, that the assessment for 1875 be fixed at five cents per mile operated.

Adjourned, subject to the call of the Secretary.

HARRY E. SHARPE,
Secretary.

ADDRESS OF THE PRESIDENT, HON. THOMAS ALLEN.

On the 12th of December, 1871, at a meeting of presidents and superintendents, held in St. Louis, a committee of superintendents was appointed to call a meeting of the managers of all Western and Southern roads. In response to the circular issued by that committee, twenty-nine managers met on the 16th of January, 1872, and organized "The Western and Southern Railway Association," the objects of which, as defined by the constitution, were:

"The promotion and advancement of railway interests by an interchange of views and ideas and by the comparing of experiences, thereby securing greater efficiency and economy in their operations; and for the adoption of such rules and regulations as will most fully carry out the purposes herein expressed."

Eighty-three (83) officers of Western and Southern roads became members.

The Association, at its first annual meeting (Jan. 15, 1873), adopted a resolution, as follows:

Whereas, The Western and Southern Railway Association was formed to discuss matters of railroad management, with a view to the improvement of such, and to the safer and more economical working of railroads, and to procure the adoption of such rules, regulations and agreements as might be found necessary or desirable for the benefit of the railroad interests; and whereas, such purposes are not of local importance merely, but are of common interest to all railroad officers and proprietors; and whereas, some of the purposes cannot be properly carried out by any local society or societies, therefore, be it resolved,

1st. That the title of the Association be hereafter, "The Railway Association of America."

2d. That the Secretary be instructed to notify all persons eligible for membership, of such change and to invite them to become members.

During 1873, 44 new members were enrolled, making a representation in the Association of 108 railroad companies.

The Association depended upon periodical conventions and committees of members as the means of attaining its objects; but we soon found that railroad managers are, as a rule, too hard pressed by their routine duty to be able to give the time and labor requisite for the production of reports which would be reliable and worthy of them. For the same reason they could not spare time to attend frequent conventions. It was evident that some other method of working must be resorted to.

On October 8, at Chicago, Messrs. Harris, Paine and Talmage were appointed a committee to report a plan for the organization of a bureau similar to that recommended in 1867 to the National Railroad Convention, by Messrs. B. H. Latrobe, Ashbel Welch, D. C. McCullum, Albert Fink and J. B. Jervis, who were a committee "To inquire into the practicability and expediency of establishing a railway bureau for promoting the railroad interests of the United States."

Our Committee reported as follows:

The Committee appointed at a meeting held in Chicago October 8, 1873, to draft a definite plan for a Railway Bureau, with rules for its government, beg to report that they have examined the subject carefully, and are unable to propose any definite plan that they think would be likely, at this time, to meet the acceptance of the managers of roads.

While the Committee regard a bureau as the most desirable form of an association, there does not seem to be such interest on the part of managers, in the information and statistics to be gathered by such means, as to warrant the expectation that the effort to establish a bureau would be successful, and especially as the expense attending a properly organized bureau would be considerable.

The Committee are of the opinion that much good would come from the formation of local clubs, or societies, where meetings could be attended conveniently, and without the use of much time in traveling. Such clubs would serve to foster the spirit of study and research, and afford opportunities for members to discuss matters of professional interest, and might take the place of the present national association until such time as the sentiment of managers gave promise that a national bureau could be efficiently organized and sustained.

ROBERT HARRIS.
CHAS. PAINE.
A. A. TALMAGE.

At the time fixed for the annual meeting last year at Indianapolis, for want of a quorum, no business was done.

The Executive Committee then submitted the draft of a new constitution, which has been recognized by 83 companies, and only three companies have formally withdrawn from the Association.

The important changes in the constitution are:

1st. The Association is changed from one of individual officers to one of railroad companies.

2d. The objects and purposes of the Association are now declared to be:

First—The improvement of railroad management by fostering a study of its principles and details.

Second—To collect and publish statistics, reports and papers relating to railroad economy.

Third—To establish a library, wherein shall be collected all published works and all accessible information concerning railroad management, and the economic relations of railroads.

Fourth—To provide a means of ascertaining the views and desires of the body of railroad managers on any point that may be raised by a member, without the necessity of having recourse to a general convention.

Fifth—To maintain an office in which may be preserved records of general and other conventions, and through which a convention may be readily called, when necessary, to discuss a subject of common interest to the members of the Association.

And generally, to take such action as may lead to greater efficiency and economy in the operation of railroads, and that shall tend to systematize the efforts made in that direction.

Thus making the Association a body which, if kept together and supplied with the necessary funds, will continue to perform work of value to railroad companies, without consuming the time of railroad officers in attending conventions, and without adding to their already laborious duties further than is necessary to give short practical replies to letters of inquiry. At the same time it offers to those who desire them opportunities to publish and make known to their co-workers the results of special investigations.

3d. In the new constitution it is expressly provided that—

"No agreement entered into at any session, or through the medium of this Association, shall be binding on any members but those who assent to the same in writing."

4th. The regular conventions are reduced in number from four to one.

5th. The assessment on members is limited to a maximum of ten cents per mile per annum.

6th. It is made the duty of the Executive Committee to collect such statistics, and pursue such investigations as may come within their power, and to publish the results from time to time in pamphlet form, for distribution to members. Also to invite railroad officers generally to contribute papers on subjects relating to the management of railroads, in the general management and operating departments.

7th. All general officers, chief engineers, and division superintendents of companies, members of this Association and honorary members, are entitled to seats in open session of the Association, and are permitted to take part in the discussions.

Since the organization of the Western and Southern Railway Association, three years ago, committee reports have been submitted on:

1. The expediency of organizing a National Railway Telegraph Company.

2. A plan for abolishing or regulating the practice of paying commissions on the sale of tickets.

3. On the best means of bringing about the total abolishment of the pass system.

4. On the best method of securing the maintenance of agreed rates and contracts.

5. On regulations affecting the employment of persons discharged by other lines.

6. On the best method of guarding against accident.

7. On train dispatching.

8. On the expediency of adopting a uniform system of national time for working time tables.

9. Sleeping car contracts and repairs of sleeping cars.

10. Rates and charges to govern interchange of freight cars and code of rules for a railway car clearing house.

11. An inquiry into the cost of transportation of mail and postal cars, and the justness of compensation paid by the post-office department.

12. On the expediency of adopting a uniform plan of locomotive reports.

13. On "compromise" gauge.

14. Responsibility of railroad companies for injury to employees.

15. The expediency of organizing a national railway bureau

16. On the relations of the Brotherhood of Locomotive Engineers to railroad companies.

Committees were also appointed to consider, but have not reported on:

1. The relations of railways to express freight lines.
2. The best methods of heating and lighting cars.
3. The expediency of adopting a uniform system of signals.

The matters which first engaged the attention of this Association were the ticket-commission system and the issue of passes. At the very first meeting it was decided that the former should be abolished and the latter considerably restricted. Agitation on these questions has been perseveringly kept alive by this Association. From time to time, attempts were made to inaugurate the desired reform. To-day, we may say, the reforms have been accomplished. The ticket-commission system has been broken up, and the issue of passes is kept within bounds far narrower than we hoped for. These reforms have effected a saving to the railroad system of the North and West aggregating over a million of dollars. This Association can fairly lay claim to a very large portion of the credit due on account of this reform; for towards the attainment of it the Association has contributed all the work of concentrating and giving expression to the opinions of the various managers, in such manner that the corruptions of the system were unanimously denounced, and no one ventured to defend it.

The most important railway convention ever held in this country—important by reason of the number of roads represented (80, 36 by delegate and others by letter), and the magnitude of those roads in the railway system—was held under the auspices of this Association, at Chicago, in November, 1873, to consider the expediency of at once breaking up the ticket commission system. Expression was there given to the opinions of the managers of eighty railroads, who unanimously declared that the system should be abrogated. Messrs. Newell, Stone, Chrystie, Sargent and Fink, as a committee, presented a draft of agreement, which was adopted by the convention, to be signed by certain railroad companies, obligating them to pay no commissions after a certain date. That attempt to inaugurate the reform was frustrated by the refusal of the Baltimore & Ohio Railroad Company to agree to abolish the practice which, however, they admitted was corrupt and wrong in principle, and should be abolished.

The labors of this Association in this matter made it easy for the bureaux appointed under the Saratoga agreement to bring about the reform. In fact, nothing was wanting but the consent of the Baltimore & Ohio manager.

This Association has also endeavored to elicit the opinions of managers as to the expediency of organizing a railway clearing house. It appeared from the correspondence elicited that, although several prominent managers favored the proposition, the formation of such an institution is not yet practicable.

In accordance with the spirit of Article XIII., of the constitution, which directs the Executive Committee to publish the results of their investigations, the publication of a Journal has been commenced. One number has been issued, and the second is being printed. In the absence of any provision for the expenses of such a publication, it was necessary to make it self-sustaining, so far as the cost of printing and publishing. Of the first number, various railroad companies took copies, aggregating 3,000, mostly for gratuitous distribution to the public. The members of the legislative assemblies of Illinois, Missouri and Kansas have been each provided with a copy.

It is very desirable that this publication be continued, but it can be so only by the aid of this Association, or someone which does not look to pecuniary reward. The class to which such a work is adapted is so small that the individuals of it are unable to bear its cost. There are many expenses in addition to that of printing and publishing. Works of reference, and other publications have to be procured; a considerable correspondence has to be carried on; works in foreign languages must be translated; traveling expenses in search of, or to verify, information are incurred; many copies of the work have to be given away; bad accounts are to be struck off, and so on. Then the salary of an editor must be provided for. To enable proper selections to be made, the editor must devote the major portion of his time to reading up and seeking for material. This labor is one that, as a financial enterprise, holds out no hope whatever to private individuals.

On the other hand, the work undertaken is one which within reasonable limits, and under proper safeguards, should receive hearty support from railroad companies.

The Association is now in communication with foreign railway and government officials and with nearly all the prominent writers on railroad subjects. It receives the foreign official reports and is accumulating a library of works—foreign and domestic—on railroad matters, such as in time will be valuable and rare.

In the past year the Association has practically withdrawn from active participation in the attempts to reform the abuses of railroad management, or to bring about concerted action, principally for the reason that various attempts of that nature have been made through other channels specially designed in each case; but the organization of the Association still remains available to bring about that discussion and concentration of opinion which must ever precede reform, and to ascertain and declare the views and desires of railroad managers generally and to take such action as the common welfare of the railroad companies call for.

It is intended by the constitution that the office of the Association should be availed of for the safe keeping and preservation of records of general conventions and agreements between railroad companies, but no use has yet been made of it in this department.

One of the obstacles to the success of an institution such as this is the impossibility of obtaining an executive committee of railroad managers which shall remain intact for any length of time. Official life is no less precarious than the natural one, perhaps far more so, and the habitat of the railroad officer is as inconstant as that of the mounds. It has so happened that your Executive Committee has become scattered—its members either unable to attend to the duties, light as they are, or have become ineligible.

In spite of the efforts which have been made to perfect the organization of the Association, and in spite of the very valuable work which the Association has already done, it is evident that there exists a lukewarmness and a state of lethargy that threatens the Association with death. Having lived for over three years as the representative Association of general managers and, I may say, the only Association that has persistently aimed at general reform, it should not be allowed to fall to pieces.

The apparent apathy of managers and their inaptitude to take advantage of the Association for the purposes for which it was designed can be attributed only to the want of official recognition of the Association by the various companies. I am fully aware that there are no greater slaves to business than railroad men. Their duties are very exacting and continuous. They are, as it were, parts of the great machine, and their presence cannot long be dispensed with. Hence, we may not expect them to command their time so as to be present at the meetings of the Association. And this is to be regretted, as there is nothing like discussion to bring out the points of a subject. Again, they find very little time to sit down and put thoughts upon paper, and collect and collate the results of their experience; yet this is the only kind of knowledge that is valuable to us in this vocation. How to bring out this knowledge, where the sources are so widely scattered, and crystallize it into form so that it may

be available for practical use, is another one of the problems the Association is dealing with. Upon this point we depend much upon individuals. The patient collection of statistics asked for, painstaking in the replies to queries addressed to them in circulars, the imparting of such special knowledge possessed by each one on the topic under inquiry, and the proposal of matters for discussion, are duties which, if cheerfully and promptly performed, would aid very much in accomplishing the objects we have in view.

There is not yet manifest among railroad men that professional spirit which leads members of other professions, such for instance as the civil engineers, to make a scientific and earnest study of their profession. This may be because railroad official life is precarious, and because, as yet, there has been no encouragement given to others than those who have much practical knowledge. Probably few young men enter the railroad service intending to remain in it for life and to rise by merit. If this is the case, then we cannot expect railroad officers to add to their already laborious duties by undertaking the study and investigation of subjects which are not of immediate practical moment, unless they feel that their positions in a measure oblige such, and unless these labors receive official acknowledgment.

If, however, the Association possessed that official character with which it should be endowed, we might find individuals coming forward to obtain recognition, some as students, others as professors. Not alone in this regard is it desirable that the Association should bear an undoubted official character. It may be well here to review the various functions of the Association.

If we examine Art. V. of the constitution, we find that the Association is designed to act as—

AN EDUCATOR, in fostering and providing the means for a study of railroad matters.

A RECORDER, in preserving records.

A REGISTER, in taking and declaring votes upon questions submitted to railroad managers.

A HARMONIZER, in taking such action as may lead to greater efficiency and economy in the operation of railroads, and that shall tend to systematize the efforts made in that direction.

The professional education of railroad employees is a work of far more value to the railroad companies than it is to the employees themselves. These come and go, but those remain forever. At present, we may say, that practically there exists no facilities for the employee who wishes to educate himself in his profession, nor many inducements for any of them to become students and to communicate the results of their investigations. In saying this, I must not be understood to disparage the efforts of the several railroad periodical publications. Such publications are necessary and are worthy of generous support, but they can fill no more than a subordinate place in a general scheme of professional education.

Prizes should be offered for papers on given subjects. All railroad literature extant should be made easily accessible, to accomplish which the Association must publish and republish freely. Statistics and information must be collected; works in foreign languages must be translated; reports and investigations, by experts, must be made and published.

This work is one which benefits all railroad companies, and should therefore be recognized and aided by them. It cannot be properly performed except by an association of an established official character, for such alone can obtain recognition at the sources whence the most valuable information can be drawn.

If arguments were necessary to convince railroad companies of the wisdom of maintaining an organization which aims to raise the standard of professional knowledge, they might be found in the facts:

1st. That those possessing a high degree of professional knowledge become, in their daily routine, teachers to a large number of co-workers, with whom they come into official and social contact, and so help to elevate the average of intelligence.

2d. That the increase of professional knowledge benefits railroad companies by bringing a greater degree of skill to the conduct of all operations, and thus effecting an indirect economy which may be difficult to estimate, but which must not, therefore, be ignored, or its possible results deemed too remote to justify present exertions.

3d. That the higher the intellectual or professional standard of any service is, the better is the class of candidates attracted to it for employment.

4th. That the railroad companies are, of necessity, known to the people doing business with them only through the company's agents, and are therefore always liable to be misrepresented. Misrepresentation is equally injurious to the interests of the companies, whether it arises from ignorance or from carelessness. At the best of times railroad companies should carefully select their agents and endeavor to lessen their ignorance; but especially now, when railroad companies are the recipients at the hands of the press and the public of abuse and unjust charges, no effort should be spared to qualify the agents for their positions. In such a cause zeal of itself is not sufficient; it must be tempered with discretion and armed with knowledge. The employees will not qualify themselves unless compelled to and unless facilities are prepared for them; professional ignorance is less injurious to them than it is to the companies, to whom it is oftentimes costly, and sometimes fatal.

The association has begun the work of education by commencing the publication of a journal, in which it is intended to bring together, in a form convenient for reference and for connected study, all information obtainable regarding railroad economy. One number has been published, the second is being printed. The Secretary reports that the publication has been received with more warmth than he had anticipated from the junior classes of railroad officers and clerks, but that the companies, as such, have not given the support and encouragement which is requisite to place the work on an efficient and permanent basis. The manager of nearly every road is desirous of taking a copy, and many subordinate officers have become regular subscribers, but a work of this kind cannot well be conducted by individuals. The class to which such a publication as this journal is interesting is a limited one; its members are short-lived and are unwilling to bear the expense. Moreover, expense is not the only consideration. Such a publication, to obtain contributions from the best writers and to stimulate students, must have an official standing, such as would secure to the writers an acknowledgment of their services from the quarters whence it is most grateful. Permanency must also be guaranteed. The mere compilation of such a work requires an amount of reading and labor in collecting, collating, indexing, arranging, etc., that can be properly done only by an editor whose tastes lie in that direction, who has been educated for the work, who has some practical knowledge of the subjects treated of, and who is not seeking promotion elsewhere. Such a person can be obtained best by making the position one fairly remunerated and of permanent duration.

In its capacity as an educator, the Association can show no immediate results. Its operations are necessarily tedious, its progress slow; but as a harmonizer, the Association, if properly supported, might accomplish practical good that would immediately become apparent.

As a harmonizer, the Association would need to use no other means than the moral force of concentrated opinion. To take the so-called "railroad war now raging" as an example. If the differences between the Pennsylvania and the Baltimore & Ohio Railroad companies were referred to the Association for arbitra-

tion, and the cases were argued before a general session of representatives of say, three hundred railroad companies, and a judgment given that would necessarily be impartial, how long would the decision of that court be disregarded? How long would the contestants defy the moral force of the judgment given by such a body of railroad representatives? Not long. The decision of such a body would carry with it the opinion of Europe, and the credit and standing of the obdurate company would become impaired.

If this Association be made, as it can be easily, the official institution of all our railroad companies, and if it be appealed to in its capacity as arbitrator, I can easily imagine that we would have no more railroad wars, although we might have plenty of competition. Concentrated opinion, persistently given expression to, is a moral force of such immense power that it overcomes all obstructions. The organization of this Association is adapted to concentrate and to give expression to the opinion of all railroad managers, in which term I include officers and directors, if those managers desire to avail themselves of it. We have already, as I have previously shown, effected the retrenchment of over \$1,900,000 of needless and vicious expenditure in the shape of ticket commissions. This result was procured solely by the concentration of opinion and its persistent expression. Van attempts, from time to time, had been made to abrogate the system, beginning with that of the National Railroad Convention of 1866. Each attempt, as it failed, seemed to make the cause more hopeless than ever; but when this Association took the matter in hand, persistently agitated it, took votes and published them, it developed the fact that of all the railroad managers who signed vouchers for the payment of ticket commissions, not one would venture to defend the practice on grounds other than of self-defense against similar practices of competitors; and when it became known that not a few managers denounced the system as one of blackmail, and when each manager found that his rivals and his friends alike were willing to stop the practice, a general agreement was easily brought about.

There are many other reforms which may be accomplished in like manner. It is, possibly, to be regretted that the railroads have not learned, and possibly have not cared to learn, how to economize so much for themselves as they have for the public. It is a very important part, indeed I may say the chief business of our Association, to study and discuss this economy of management, and to demonstrate how we may give cheap transportation to the public, and yet, at the same time, secure fair remuneration to the labor and capital employed in it. In this business, however much others may talk and resolve, it falls to our lot to be the men of action. It is by our co-operation that improvements are to be made, and cheaper transportation secured. No political demagogue, or idle philosopher, will probably object to a combination for such a purpose. Individual economy is a matter of easy accomplishment; but that economy which requires the co-operation of individuals of diverging interests is more difficult, and by many considered impossible of attainment.

Competition has produced curious effects. On the one hand it has led railroad companies into extraordinary extravagances; on the other, it has created a demand for cheap transportation, to comply with which necessitates rigid economy. But not alone do merchants demand the lessening of transportation charges; the very necessities of the railroad companies insist on a reduction of the cost of transportation. The maxim that high rates produce high revenue is exploded. Rates cannot be too low for commerce. The increased transportation facilities in other parts of the world bring those parts into competition with us. If we desire to do the business, we must prepare ourselves to place the cost of transportation at the lowest figure possible; to do which we must eliminate all those expenses which do not conduce either to safety or the efficiency of the service. These economies can be effected only by co-operation.

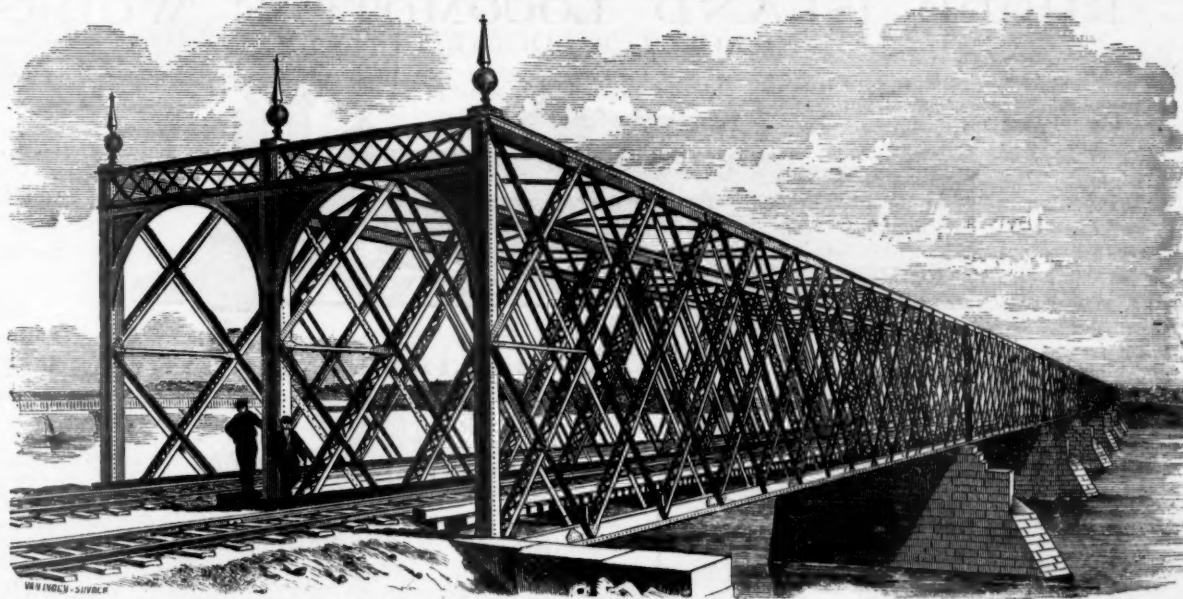
A point to which I would ask your earnest attention is the expediency of establishing, as soon as possible, uniform rates. The fluctuations in rates which have occurred so frequently for years past have proved injurious to both the railroad and commercial interests. They have introduced into commercial calculations a disturbing element that has hindered the rapid expansion of commerce; has caused ruin to many by unsettling markets, and has taken millions of dollars from the pockets of the railroad proprietors to put them into the hands of speculators. Reductions of rates to meet great commercial or economic emergencies, or to meet foreign competition, are productive of good; but spasmodic reductions, at the whim or caprice of a few individuals, are ruinous to the interests of all but a few speculators. Attempts have been made to cure this evil too, and they also have failed; but those attempts have all been isolated, spasmodic ones. If the railroad business of the country has been conducted in a manner unworthy of and injurious to the vast interests involved, the remedy lies with the proprietors. While yet they have the power in their hands, they should rise equal to the emergency. Discussion of these matters in conventions of an official association, supported by all the railroad companies, would bring to bear upon individual companies and managers an irresistible pressure. A body composed of the representatives of all our railroad companies would take a broad and statesmanlike view of the situation, and would inaugurate measures productive of common benefit. It would rise superior to all local views and petty jealousies. This is the only plan by which the policies of our railroad companies can be harmonized, and the selfish aims of individuals defeated. The interests of railroad companies as a whole are, in fact, identical; although the interests of individual ones may differ. It is time that the interests of individuals were sunk in the common good. It is time that personal quarrels and ambitions were deprived of their power to waste the property of those who have no sympathy with their quarrels or their ambitions. It is time that the grand system of railroads of the United States be administered with statesmanlike ability, and that its energies and powers be bent to the accomplishment of the work waiting for them, instead of being frittered and wasted in petty squabbles. This harmony can be procured through the means of moral force only, and this moral force can be created only by the concentration of opinion and its persistent expression, by means of a representative association.

Much more might be said in favor of a representative association, but before I close I desire to point out that the Association cannot, as a harmonizer, accomplish its work unless it bears an official character, and unless nearly all the important companies are represented, not only by the appearance of their names on the roll, but by the appearance of their representatives in convention. Picture to yourselves a congress of representatives of three hundred railroad companies meeting regularly once a year and say whether such a body would not exert an immense moral influence on the management of the roads. Without a representative and official character, we can do no great work.

Look at our railroad system! Behold its grandeur; the vast wealth sunk in its construction; the fabulous wealth created by it! See the millions dependent on it for maintenance! Think of the future of this system, when this mighty continent shall be teeming with a population numberless as the sands on our sea shores.

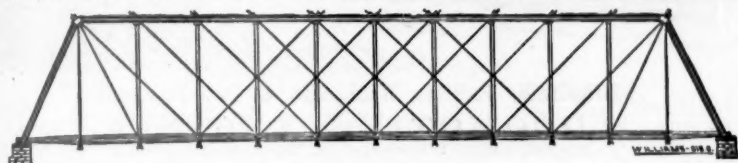
And then behold, with all its inherent power, this system lying helpless; attacked on every side by demagogues and adventurers. Misrepresented on every hand; oftentimes in ignorance, oftentimes in malice. Behold it torn to pieces by internal dissensions and personal ambitions. Then say if there is not need of a representative association, which will strive to harmonize the parts of this great system.

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[Accompanying engraving represents the Springfield Bridge, built by the Leighton Bridge & Iron Works.]

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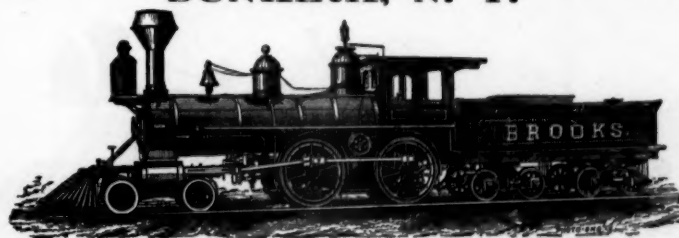
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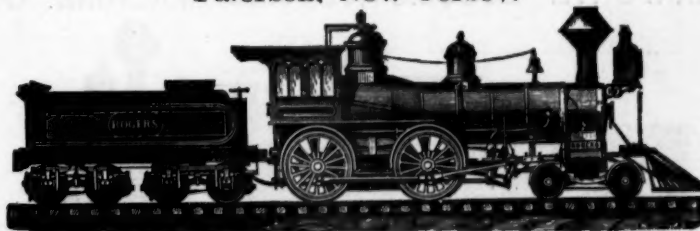


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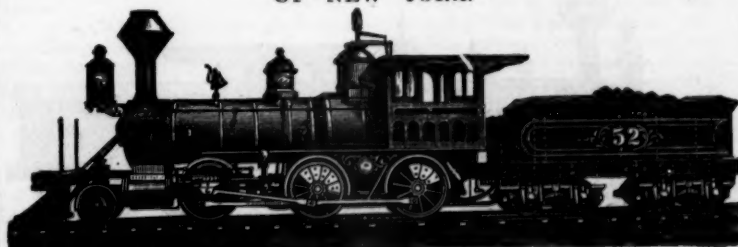
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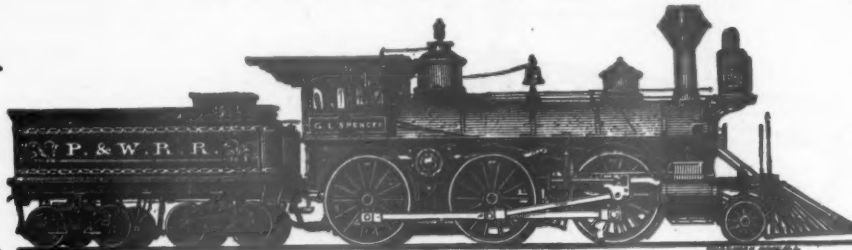
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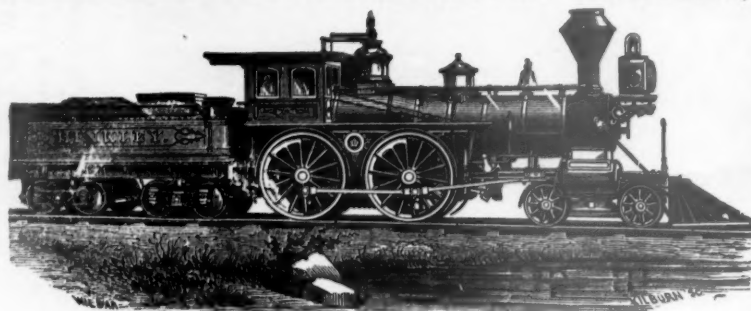


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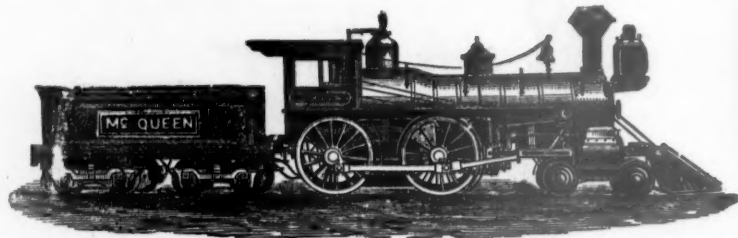
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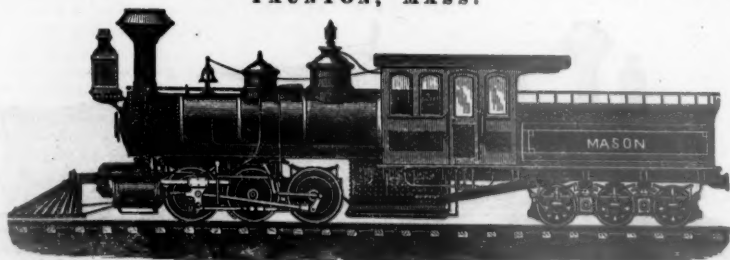
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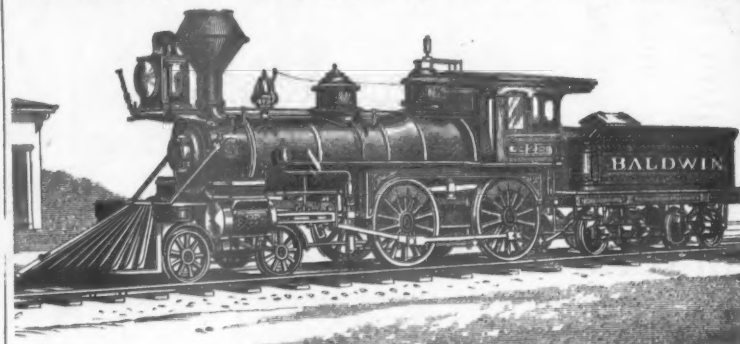
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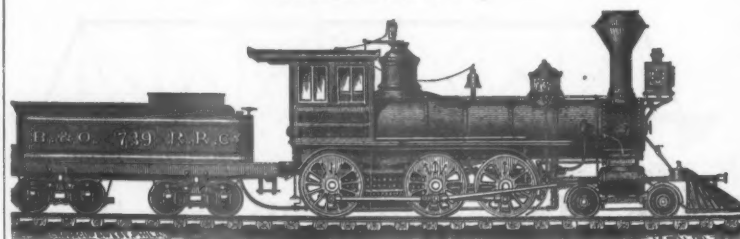
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